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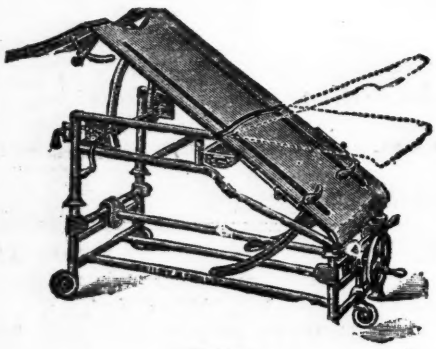

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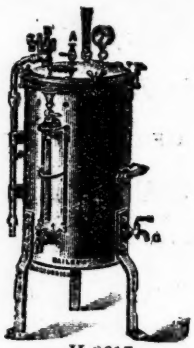

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An Address
ON
WAR LESSONS FOR RADIOLOGY.

DELIVERED BEFORE THE ELECTRO-THERAPEUTIC SECTION OF THE ROYAL SOCIETY OF MEDICINE.

BY

C. THURSTAN HOLLAND,

HONORARY MEDICAL OFFICER, ELECTRICAL DEPARTMENT, ROYAL INFIRMARY, LIVERPOOL, ETC.

WHEN war broke out so suddenly in 1914 no one recognized the strain it was going to impose on every branch of the service. The rapidity with which one event followed another upset all calculations, so that measures taken to deal with conditions as they arose rapidly became obsolete, and others had to be improvised to take their place. In July, 1914, the schedule of army *x*-ray apparatus was practically that which had been in use during the Boer war, and few or no army medical officers were expert in *x*-ray work. No extra pay was granted for such work, and there was no special organization in the medical branch of the War Office to deal with it.

While it has been easy to criticize War Office administration adversely, it should be remembered that there had been nothing in previous wars, nothing in the army work during peace, and nothing done by any radiologist in this country to suggest to the authorities that an elaborate department should exist. The radiologists themselves had not realized what would be the necessities of *x*-ray work in a great European war.

Criticism of the War Office, though it found expression early, was more justly directed to want of action at a later date. Long before 1917 it had become evident that *x* rays were a prop on which much of the successful war surgery was being built up. Surgeons, especially the younger ones, were everywhere realizing that efficient *x*-ray work was essential to them; and yet, down to this time, and indeed even later, nothing had been done officially to ensure that the *x*-ray work, equipment, and organization should be controlled by an expert board or committee, and that the whole control and management of this branch of medical work should be in expert hands. It is in this direction that the permanent medical staff of the War Office failed badly. I recognize of course that my friend Sir Archibald Reid (Captain Reid then) had been attached to the War Office in an advisory capacity as early as November, 1914, and that later on certain physicists were called in to help him, and a small committee was formed. I recognize also very fully the splendid work he did for so many years, and rejoice in the honours which have been conferred upon him; but this does not alter what I consider to be the fact, that the expert radiologists of this country, as far as giving advice and helping to organize and control *x*-ray work, were entirely ignored.

It is possible that the War Office chiefs were not alone to blame. At that time many of the older surgeons were almost the only members of the profession who were consulted as advisers. Many of us are well acquainted with the attitude of many eminent surgeons towards radiology—it exists, in London especially, even to-day—the attitude which may be summed up as follows: "All we want is a good radiograph; this can be taken by a layman quite as well as by a medical expert, even better perhaps; give us this and we can read the plates ourselves, make our own diagnoses, draw our own conclusions." The committee of eminent surgeons which met at the War Office never had associated with it even one expert radiologist, and Reid did not sit upon this committee. In other words, advice on *x*-ray matters was a question for surgeons, and for surgeons alone. It is an open secret that the consulting surgeons reported to the War Office that "all was well with the *x*-ray work throughout the Home Commands." I have no doubt whatever that if, at this time, the expert *x*-ray men working in army hospitals at home had been asked to report, certain grave defects in the *x*-ray work, then existing, would have been pointed out. Most certainly if I had been asked—to make it a personal matter—my own experiences of the early years would have given me ample grounds for proving that things were anything but satisfactory. I will give some examples.

During the first year of the war an Army Order came to the hospital to which I was attached instructing me to receive two young students of physics, to give them one week's *x*-ray training, and then to report upon them as to their suitability for *x*-ray work. I would emphasize the fact that they were physics, and not medical, students. They spent a week with us—wrecked several tubes, and incidentally the temper of the sister-in-charge. I then reported that I found them pleasant and intelligent students who had put in a week's work in the department. I did not commit myself further than this. Very shortly afterwards I received two letters of grateful thanks from two young gentlemen who had been appointed to take charge of two hospital *x*-ray departments at a salary of £250 per annum each.

A similar instance illustrating the official attitude towards *x*-ray work was that in which an elderly medical man came to me with a request for intensive instruction, as he had been ordered to take charge of the *x*-ray work on a very large hospital ship. For all practical purposes he knew nothing about *x*-ray work. There was no time to give him any instruction of value before his ship sailed; the day before it sailed the *x*-ray equipment arrived and was dumped on board. I saw this equipment at his urgent request; it was as beautiful as elaborately polished wood and metal work could make it; on the other hand, I do not know to this day what some of it was meant to be used for, and I am equally certain neither does the gentleman placed in charge. He had also been supplied with about £20 worth of 15 × 12 plates, and no dishes in which they could be developed.

Appointments of these kinds were common, and their direct results can be illustrated by the following:

1. I saw a man who had a large healed operation wound, 6 in. in length, to the left of his sternum and directly over his heart. He told me that he had been *x* rayed, and that a bullet had been seen and located, and the surgeon had attempted its removal. As a matter of fact the said bullet was exactly one inch deep in the muscles of the back.
2. I saw another man who had been trephined after an *x*-ray examination had shown a small foreign body inside the head. The man told me that he had had no symptoms whatever except a slight headache, and that at the time of the operation the original wound was quite healed. Now it seems to me fairly certain that no surgeon would have attempted such an operation if the *x*-ray report had been to the effect that the piece of metal, very small, was two inches deep in the frontal lobe, which was where it was.
3. An officer I once saw had a fairly large foreign body behind the upper part of the left lung; he had no symptoms calling for its removal; the wound was healed; we were not certain whether it was just inside or outside the pleura. Later on I saw this officer again, and this after an eminent surgeon, who had made his own screen examination, had decided upon the anterior route by means of a large incision in front just below the collar bone. I need hardly say that he did not find and remove the foreign body.

These are merely examples of what we were all of us more or less frequently seeing. They were inevitable under the circumstances, but they show quite clearly that all was not well with the *x*-ray work at the time when so favourable a report was furnished to head quarters. Later, in 1918, *x*-ray experts were appointed to the various commands as advisers to the D.D.M.S.'s, a sufficient acknowledgement of error, inasmuch as it showed that at this period the War Office had become alive to the fact that *x*-ray work should be organized and officered by experts, who should be responsible for the *x*-ray work to the heads of departments. I look upon this change of attitude, tardy though it was, as a very distinct recognition of the claims, which had all along been made, as to the status of radiology in the army.

This recognition was due to two causes—the sympathy extended towards *x*-ray work by Sir John Goodwin, and the support which the three surgical members of the advisory board (Sir Berkeley Moynihan, Sir Harold Stiles, and Sir Robert Jones) gave him in this matter. We radiologists owe a very great deal to these four men, more, perhaps, than many may be aware of.

These expert appointments—the addition of several experts to the War Office *X*-Ray Committee; the grading of all R.A.M.C. officers as regards their *x*-ray knowledge and abilities—came too late, for it was well on in 1918 before any of them became effectual, and events moved so rapidly from this time onwards that no great amount of reconstruction or reorganization was possible; still the

recognition of important facts will undoubtedly have a distinct bearing on the future.

Some recollection of what happened to ourselves in the first few years owing to the attitude of the authorities are not devoid of interest. Most of us older radiologists were, when the war broke out, *à la suite* Territorial officers, others joined up in a similar capacity as it became evident that there was a great deal of *x*-ray work to be done. Many of us were too old to go abroad or had already been damaged by *x* rays to such an extent as to make this impossible.

I joined in 1908, when the Territorial hospital staffs were first appointed. I took the junior rank of captain, looking upon it as merely honorary, and on the distinct understanding that I should, if ever required, perform such duties in a military hospital as I performed in civilian hospitals. Mr. Macpherson, then Under Secretary of State for War, in November, 1917, in the House of Commons, to all intents and purposes admitted that this assurance had been given; qualifying it only by saying that the "clinical" duties should not necessarily be identical. He further stated that he was not aware of any case in which *à la suite* officers were compelled to perform duties other than clinical, and later on that he was not aware that any of these officers were called upon to inspect hospitals administratively.

As he seemed to be so ignorant of what we all knew was going on in every Territorial hospital in the country, I wrote him the following letter in December, 1917:

"Sir,

"I beg to inform you that officers of the *à la suite* staff have been ordered to perform duties other than either clinical or medical. Ever since the war began many officers on the staff of the 1st Western General Hospital have been ordered to do (1) orderly duty, (2) inspect auxiliary hospitals.

"Consulting hospital physicians, specialists, such as physicians attached to general hospitals in the capacity of throat specialists, skin specialists, anaesthetists, *x*-ray specialists, and even dentists, have been detailed for these duties. Most of these men may be described without prejudice as well known leaders of the profession in their various lines—most of them men of about 50 years of age. These men, for the most part, took their commissions with a view to being able to offer their country skilled professional services of the most valuable kind in the event of national emergency. They were willing and anxious to render these services. They accepted the junior rank of captain to enable them to perform these services.

"(1) Orderly duty consists in, amongst other things, reclassifying wounded and sick discharged from the attached hospitals and already classified by the medical officers attached to these hospitals. In admitting cases sent to the base hospital by other hospitals. In signing railway warrants and the letters of the O.C. and the registrar of the hospital. In doing odd duties of all kinds.

"(2) Inspecting auxiliary hospitals they are instructed to report on the keeping of books, the condition of ashpits, the condition of kitchens, and many things entirely apart from clinical work.

"I would most respectfully point out that these officers were, and are, entirely ignorant of, and quite incapable of reporting on and doing much of the work required, and that in these respects much of the work they have done is absurd. Additionally, the waste of time valuable to the army and to the general community is obvious"—and so on.

I suppose I was fortunate to get any reply at all, but the fact remains that I did get one—from "the great man's" secretary. It read as follows:

Dear Sir,

I am requested by Mr. Macpherson to acknowledge your letter of the 18th instant.

What has been the Effect of the War on the Production of X-ray Apparatus, on the Invention of New Instruments, etc.?

The only outstanding advance in apparatus has been the American production of the standard mobile transformer unit with its radiator type of Coolidge tube. This may be said to be the direct result of the war, and it marks a distinct advance in apparatus. An *x*-ray generating outfit of this kind, working from a petrol engine or a lighting circuit, constructed to work at practically a fixed milliampèrage through the tube, almost fool proof—and this notwithstanding the recent lamentable accident to our French colleague—capable of doing all the work required at casualty clearing stations, advanced hospitals, and, indeed, most base hospitals, would have been invaluable had it been available at the beginning of the war as a standard apparatus for general use. An outstanding fault of our equipment, and a fault it appeared to be impossible to remedy, was that no standardization seemed to be possible. At the beginning the shortage was such that it was necessary to take almost any apparatus which the instrument makers could supply. Many attempts were made later on to get some of the things standardized; but the difficulties in manufacturing and the difficulties of labour, which got worse and worse as more and more men were called up, made such ideals impossible. Though the outbreak of war found out the weak points in our home *x*-ray industry, on the whole our manufacturers met the situation splendidly; and as far as concerned coils, interrupters, couches of various kinds, and most, if not all, of the minor accessories, the supply was reasonable and the quality very good.

Under the direction of the War Office Committee the petrol engine sets, chiefly for use abroad and in places where an electric current supply was not available, reached a high level of excellence and efficiency. Later the mobile car units were turned out in good numbers, and were remarkably useful and efficient. Their design and equipment left little to be desired, and they accomplished a great deal of most useful work, especially at casualty clearing stations. Plates and printing paper suffered somewhat in the earlier years. In the later part of the war both were excellent. Tubes threatened at first to be a serious question. We all know to what an extent we had relied upon Germany for our tube supply. The difficulty, however, was overcome, and whilst importations from America helped to a considerable extent, our own manufacturers rose to the occasion. Taking into consideration the position of the home industry in 1914, the glass difficulty, and the almost entire absence of any skilled tube makers, the results obtained were tremendous, and great credit is due to all those who took this matter in hand.

It is for us all, I think, to see that we give all possible support to our own manufacturers in the future, and do not buy foreign-made tubes. At the same time my personal experience is that some makes of home-manufactured tubes have not been so good or reliable during the past six or eight months as they were during the later years of the war. The faults I have had to complain of are: (1) An undue tendency to puncture, (2) a liability of the kathodal terminal inside the tube to loosen, and in some cases to break off, and (3) the very serious fault of the regulating device being quite inefficient. A word of warning to the manufacturers may be uttered that such faults must be overcome if we users are not to be driven by bitter experience, at a cost to both our pockets and our tempers, to buy in other markets. I have said that the plates and printing paper rose to a high degree of excellence during the war, but here again, and especially during the past six or eight months, *x*-ray plates, in my opinion, have undergone a serious deterioration in quality. I have been finding it necessary to increase times of exposure very considerably, and even then have not been able to obtain the same quality of negative as I did before the war. It is not only slowness but loss of quality of which I personally complain. Complaints to the makers produced at first only lame excuses, but eventually some improvement was noticeable.

What has been the Effect of the War on X-ray Work and on X-ray Workers?

Those who were already experienced in *x* ray work were not taught very much by the war; they gained great experience of the localization of foreign bodies and had many opportunities of perfecting the *x*-ray examination of bone injuries, but, without claiming to make a complete list, I may say that the following classes of cases seem to me to be those in which radiology proved of very great advantage, and in which the science and art of radiography was advanced:

I. In diaphragmatic hernia, a condition recognized occasionally before the war as within the scope of *x*-ray diagnosis, owing to the comparative frequency with which this condition has been seen following wounds of the diaphragm, our *x*-ray knowledge of the appearances, and of the methods of examination, and the diagnostic points has been advanced.

II. In "gas gangrene" an entirely new *x* ray advance was made. The possibilities of *x*-ray diagnosis in this condition were first of all established by my friend, Dr. Morrison, when serving with the Liverpool Merchants' Hospital (1915). Later, radiology became of great importance in the diagnosis and prognosis of gas gangrene, as is well shown in a masterly paper by Miss Ivens (1916).

III. The opportunities of examining cases of tropical abscess of the liver by *x* rays have increased enormously, as men returning from the East who have had dysentery, and have apparently completely recovered, later on develop these abscesses, in which an *x*-ray examination is often very definite.

IV. In therapeutic work the treatment of keloid condition by both radium and *x* rays has been much advanced, and the depilating power of *x* rays has proved of the utmost value after plastic operations on the face following war injuries. I would especially mention the work of our colleagues, Robert Knox, and Stevenson of Dublin.

I do not intend to say much about localization and the many and various instruments elaborated in its cause. Some little bits of apparatus were invented or designed with a view to facilitating either actual localization or the operations for the removal of foreign bodies; but when we come down to bedrock it is as well to pause and consider the position. In a paper by Dr. Remy of Paris in the *Archives of the Röntgen Ray* in August, 1900, and published still earlier in France, he showed the method of screen localization from below up by means of a tube shift—that is, the triangulation plan nearly all of us have used as the basis of our methods. Remy also used metal directors from above to indicate the paths of the *x* rays, and to point to the spot where the foreign body actually was—the forerunner of the Hirtz compass and all similar devices. Localization work during the war has been interesting; it has brought out much ingenuity, but I do not consider that it has brought about any real great advance in the science and art of radiography.

The Great Effects of the War on X-Ray Work.

The war brought radiology into very great prominence, and this notwithstanding the attitude of the authorities during the early years.

The enormous number of laymen and women who became interested in, and who took part in the work of, our war hospitals, both abroad and all over this country, altogether apart from the enormous number of wounded who were radiographed, means that the eyes of the general public have been very much opened to the importance of *x*-ray work in medicine and surgery, and in the large home hospitals the cases were by no means limited to war injuries.

The effect of this will tell in many ways. It will mean a large increase in *x*-ray work, as members of the lay public either themselves, or on account of the advice of friends, will increasingly insist upon having *x*-ray examinations made.

The whole of the medical profession also has had the same thing impressed upon them. It is really only within the last twelve years or so that the *x*-ray position as regards the kidneys, the stomach, and the thorax has gradually become firmly established. To the majority of the general practitioners scattered all over the country this work was not well known. All of them have now served in war hospitals at home or abroad, or have been intimately associated with the work in these hospitals, and they have been able to see and to realize the advantages to themselves and to their patients of an *x*-ray examination conducted by an expert. Thus, again, the direct result of the war will mean a great increase in *x*-ray work.

Surgeons and physicians, especially perhaps the former, have had it forcibly impressed upon them by what they have seen day after day—"the importance and scope of radiology." This again means increased work.

We may therefore in the future—indeed, I know from my own work, both hospital and private, that this is the case now—look forward to a greatly increased use of radiology for diagnostic purposes, and also to a demand that this work shall be of the very best quality.

There is, however, an important fact which should not be overlooked, whilst medical men generally—who do not intend to practise radiology—have seen for themselves the value of *x*-ray work, from two other classes of workers there is a possibility of harm resulting.

In the first place a very large number of lay assistants, males and females, have learnt a smattering of *x*-ray work; some of these have become really very efficient, but for the most part this is very far from having been the case. Many of them, however, efficient or otherwise, have a very exalted idea of their capabilities, and there is a danger that a certain number of these people may set up as unqualified practitioners to carry on the "art" of "*x*-ray photography." It is for the medical profession generally to see that, if this happens, success shall not be the result.

In the second place—and, to my mind, this is even more serious—a large number of qualified medical men have learnt certain parts of *x*-ray work very well. They have become very efficient at looking after coil outfits, in taking and interpreting radiographs of injuries to bones, in the localization of foreign bodies; but as to their general knowledge of radiography and its interpretation as regards the kidneys, the thorax, the abdomen and its contents, bone diseases and *x*-ray treatment, their knowledge is so small that they may rightly be described as knowing nothing whatever.

It is also quite evident, from some of the communications recently published, that many of them know nothing of the past literature of the subject. Some of them have already, I believe, started work as *x*-ray specialists; others are contemplating such a step. I would utter a word of warning and of advice. The University of Cambridge has published the syllabus of a comprehensive course in radiology and electro-therapeutics. At the end of six months' teaching an examination will be held and a diploma issued to those who are successful in passing it. My strong advice to all those who have learnt their *x*-ray work during the war is to take up this course of instruction, and to obtain the diploma, before starting on their *x*-ray careers. The six months sacrificed in learning will be as nothing; the advantages to themselves and to their future clients will be enormous. They will not then learn their *x*-ray work at the expense of much anxiety to themselves and of much harm to their patients, whether hospital or private.

This Cambridge diploma has been instituted at a very opportune time, and it should assist materially to raise the status of *x*-ray work and of *x*-ray workers.

CONCLUSIONS.

Let me briefly sum up the chief points.

In the first place, the war has taught us the tremendous value of radiographic work in war—that war surgery depends very largely for its success on efficient *x*-ray work which must be directly controlled by expert medical radiographers; that such work should be recognized by the army as expert work; that it has shown most conclusively that there is a necessity for a permanent staff at the War Office to organize (1) the teaching of *x*-ray work to officers, (2) the teaching of trained nurses and orderlies who should be available as assistants, (3) the standardization of army *x*-ray equipments; and with this goes the further point, that such equipment should be kept well abreast of the times.

In the second place it is our duty to see that in the future the teaching of radiology is put on a proper basis in all our medical schools; that not only should post-graduate work be firmly established, and that all who wish to practise as experts should of necessity be forced to undergo special training and take a special diploma, but that in addition a certain knowledge of *x*-ray work should be part of the ordinary curriculum of medical students; that teaching should be organized in view of this, and that in the examinations qualifying for practice *x*-ray work should not be ignored.

CHADWICK naval and military prizes, each of £100 and a gold medal, were presented by Sir William Collins, chairman of the Chadwick Trustees, on March 8th. The naval recipient was Surgeon Commander Edward L. Atkinson, who was a member of the Scott Antarctic Expedition. In 1914 he was one of an expedition sent by the Admiralty and Colonial Office to investigate diseases occurring in river gunboats in the tropics, and later introduced a system of electrolyzing sea water for use as a disinfectant. In 1915 he was appointed a health officer to the Royal Naval Division ashore. The army medal was presented to Brigadier-General W. W. O. Beveridge, C.B., who was assistant director for sanitation, and responsible adviser to the D.G.A.M.S., France, on all matters connected with sanitation and the prevention of disease. He is a permanent delegate for Great Britain to the Inter-Allied Sanitary Conference.

An Address
ON
SOME POINTS IN CONNEXION WITH RENAL DISEASE.

DELIVERED BEFORE THE LAMBETH DIVISION OF THE BRITISH MEDICAL ASSOCIATION.

BY

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SOME of the recent investigations on nephritis are of practical importance, and I have been fortunate in having the opportunity of proving their value both in treatment and prognosis. The opportunity arose from the fact that Dr. Hugh MacLean and Dr. De Wesselow have been and are still engaged at St. Thomas's Hospital in an investigation on war nephritis. With the greatest readiness they have collaborated in the investigation of my ward cases and placed their knowledge at my disposal. Before going further I hasten to express my indebtedness to their published results and to them personally for many facts gleaned during conversations with them.

It is well known that the predominant symptoms of renal disease fall into two main groups—the oedematous and the cardio-vascular. In acute nephritis both sets of symptoms may be present, although not always in equal degree; in chronic nephritis the predominance of symptoms of one or other of these groups enables us to recognize two distinct types—the chronic parenchymatous or tubal and the chronic interstitial or granular form.

Nephritis of the chronic parenchymatous type is characterized by profuse albuminuria and diminution of the quantity of urine passed, coupled with obtrusive oedema and effusions into the serous sacs, but cardio-vascular changes are not at all a pronounced feature. The chronic interstitial form, on the other hand, is distinguished by scanty albumin, increased excretion of urine of low specific gravity, cardiac hypertrophy, and raised arterial tension. Oedema is not present in this type until the terminal stages, and then is not of the renal distribution, but of that variety which is attributed to cardiac failure.

Whether these two forms of chronic nephritis originate as such or develop from the continued selective action of an antecedent attack of acute inflammation we will not now linger to discuss. I propose rather to direct your attention to some interesting facts which have a bearing on the symptomatology and treatment of the two types. For many years we had to be content with the results of urinary analysis alone when investigating cases of renal disease. Estimation of the quantity of albumin, the detection of blood, measurement of the amount of water passed, determination of the specific gravity, and, it may be, an estimation of the urea and chlorides, were the points to which, in conjunction with a microscopical examination of the sediment, attention was chiefly directed, and there is no doubt that in this way most instructive information may be obtained.

But a much clearer insight into what is happening may be gained by a combination of urinary analysis with periodical examinations of the blood. Improved methods now enable the clinical pathologist to estimate with accuracy the urea content, the chloride content, and the amount of protein in a small sample of the blood, and so to throw a flood of light on some of the problems of renal disease. The methods are laboratory procedures, and it is not my province to describe them, but they have important clinical bearings, and it is important that we should be acquainted with the main facts which have come to light, and see how they fit in with our clinical knowledge.

THE PERCENTAGE OF UREA IN THE URINE AND IN THE BLOOD IN NEPHRITIS.

In the early stage of acute nephritis all the functions of the kidney suffer, among them the power of excreting urea, so that there is generally a marked defect in the elimination of this body, together with a diminution of the amount of urine passed. In favourable cases this retention is transitory, and normal elimination is sooner or later re-established.

In chronic nephritis, however, observations on the urea excretion have led to discordant results. Attempts to correlate the urea excretion of chronic nephritic patients with their clinical condition met with no success. The reason of this failure gradually became obvious. The renal mechanism is such that under circumstances of stress the kidneys are capable, even though much damaged, of eliminating a quantity of urea which is approximately normal, but they do so—and this is the important point—by secreting an additional quantity of water. We must therefore, in attempting to gauge the renal efficiency, take into consideration both factors; in other words, the percentage of urea in the urine or the urea *concentration* is our criterion, and not merely the amount of urea excreted in the twenty-four hours.

The urine of a normal individual on ordinary diet contains about 2 per cent. of urea. For patients under observation in hospital an average of 1.6 per cent. is found to be nearer the mark if the kidneys are healthy. When the kidneys are damaged the concentration falls below this figure.

That the specific gravity of the urine is consistently low in cases of advanced granular kidney is a well recognized fact, and these are precisely the cases in which difficulty of urea excretion is particularly marked. It may be asked, therefore, Why not take the specific gravity of the urine as a criterion of renal efficiency in place of the more troublesome urea estimation? Although the determination of the specific gravity of one sample might not be reliable, the average over a week or longer might yield useful information. An objection to this method lies in the fact that the chlorides and sulphates form heavier solutions than does urea, so if these salts are deficient the specific gravity will fall, and also the specific gravity will be low if excessive fluid is being ingested and excreted, quite apart from urea defect. None the less there is a marked tendency for a low specific gravity to accompany low urea concentration, and it is difficult for an extremely granular kidney to secrete urine of a greater specific gravity than 1012 at the highest. I have several times found this test valuable in making the distinction between the granular kidney and the kidney of arterio-sclerotic heart failure.

The late Dr. Foxwell of Birmingham paid especial attention to the subject of urea excretion in conjunction with the amount of urine passed, and he concluded that an increase in quantity to 60 oz. per diem or more was indicative of renal fibrosis, just as was a specific gravity below 1012. Combining the specific gravity, the quantity of urine passed, and the percentage of urea, his analyses led him to the following formulae:

	Specific Gravity.	Quantity.	Urea Percentage.	Total Urea.
		Ounces.		Grains.
Healthy male	1019	39	2.1	—
Healthy female	1019	28	1.8	—
Moderate work possible ...	1012	50	1.4	310
Occasional light work ...	1011	45	1.3	238
Confined to bed...	1010	40	1.0	175

Although a patient suffering from chronic nephritis may, with the aid of polyuria, excrete as much urea in the twenty-four hours as does a patient with normal kidneys, examination of the blood brings to light a marked difference in the two cases. The normal individual on ordinary diet will have in his blood a urea content of 20 to 40 mg. per 100 c.cm., whereas in that form of chronic renal disease which leads to the retention of non-protein nitrogenous bodies, of which urea is the chief and is taken as the index, the urea content of the blood may rise to 100 mg. per 100 c.cm. or higher. A similar retention may occur in acute nephritis also, and in some cases of renal disease the percentage has been found to rise to 300 or even 600 mg. It appears that any rise above 300 mg. is of fatal prognostic import.

In all forms of acute nephritis urea retention is a very constant feature, but in chronic nephritis it is only characteristic of cirrhotic, granular, or fibrosed kidneys, as opposed to the chronic parenchymatous or chronic tubal variety of the disease.

On the facts which they have ascertained with regard to urea retention and urea excretion MacLean and De Wesselow have based a new and simple test which promises to be of much practical value in nephritis. Fifteen grams of urea are dissolved in 100 c.cm. of water. This draught, which may be flavoured with tincture of orange, is administered the first thing in the morning on an empty stomach, the urinary bladder at the same time being emptied. Two hours later the bladder is again emptied, and the concentration of urea in the specimen is determined. With normal kidneys the concentration will be from 2 to 3.5 per cent. With a concentration of 1.5 per cent. the kidney is only moderately efficient, whilst a concentration of 1 per cent. or less indicates that the kidneys are severely damaged. Low concentration is generally correlated with urea retention in the blood. There is one fallacy which must be guarded against—urea may cause considerable diuresis in some normal individuals. So, if the specimen obtained two hours after administration shows a low concentration, a further specimen should be obtained an hour later, by which time diuresis should have ceased. If the concentration is still low the kidney is not normal.

It may be mentioned that in cases in which urea retention occurs this substance is also found in excess in the cerebro-spinal fluid. The normal content of this fluid gauged by the hypobromite method is said to be 0.006 per cent., whilst in renal impermeability to urea it may rise to 0.1 per cent., and in some instances is as high as 0.6 per cent. In this fluid concentrations above 0.3 per cent. are said to indicate a fatal issue.

From what has been said it is evident that a knowledge of the amount of urea present in the blood, and incidentally also in the cerebro-spinal fluid, affords two important indications: In the first place, it tells us that a certain type of renal inadequacy is present, and in the second, it affords prognostic indications which, in a certain number of cases, cannot be arrived at by other means.

That urea itself produces toxic symptoms it is not possible to assert. The general opinion hitherto has been that urea itself is a comparatively harmless substance. We must not forget that urea retention goes hand in hand with the retention of other non-protein nitrogenous bodies such as uric acid, creatinin and purin bases; and we must also remember that those renal cases which have urea retention are sooner or later characterized by raised arterial pressure and cardiac hypertrophy. Some interesting considerations bearing on the absence of renal dropsy in cases of this type will be mentioned presently. That uraemic convulsions may occur when urea retention is present the following case well shows; but Dr. MacLean tells me that his investigations have led him to the conclusion that it is not possible to predict uraemic convulsions from the amount of urea found in the blood. Indeed, the chronic cases with the highest amount of urea retention are more likely to be characterized by uraemic twitching and coma than by explosive convulsion.

J. G., a delicate-looking lad of 12 years, was admitted under me in December, 1919, with oedema of face and ankles, and a history of two days' obvious haematuria. Five years ago he was laid up with pneumonia, and he went through a sharp attack of acute rheumatism twelve months before his present illness. A fortnight before admission he complained of sore throat, but had no pyrexia, rash, or other signs of scarlet fever.

On examination he was found to be pale, with moderate oedema of the face and ankles. There was evidence of a little fluid at the bases of the pleural sacs, and the heart was slightly enlarged. The blood pressure was 120 mm. The urine was diminished in quantity, an average of 30 oz. being passed in the twenty-four hours. Much albumin was present, also blood. The sediment contained epithelial, blood and hyaline casts in some quantity. The blood urea was 140 mg. per cubic centimetre, and the urine contained only the smallest trace of chloride, so both urea retention and chloride retention were marked. The temperature was slightly febrile; the tonsils were chronically enlarged.

Six days after admission he had, without warning, a series of severe convulsive fits followed by a state of semi-coma. Venesection to the amount of one pint followed by saline infusion of 30 oz. caused immediate improvement, and the fits did not recur. Profuse sweating was induced by hot packs, and nothing but milk and barley water allowed. Four days later the blood urea was found to have fallen to 54 mg. and the blood pressure to 112 mm. A week later still the blood urea was 35 mg. Coincident with this fall, and no doubt responsible for it, was an increasing polyuria rising to 70 or 80 oz. per diem. At the same time the albumin in the urine, which at first amounted to 7 grams per litre, had fallen to ½ gram, the fall being gradual. He is still under observation.

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Salt Retention and its Results.

It has long been known that retention of chlorides in the body can produce oedema of the tissues and serous effusions, water being retained to keep the salt concentration in the tissues down to the normal limit of 0.6 per cent. sodium chloride solution. In other words, for every 6 grams of salt retained, the body will store up 1,000 c.cm. of water. A very important function of the kidney is the regulation of the concentration of salt in the plasma. In certain forms of nephritis the kidney appears to lose the power of excreting chloride in the normal manner; these forms of nephritis are those which are associated with oedema; they may be acute or chronic in character, but their essential characteristic is that they are parenchymatous or tubal in type.

Blood examination does not throw much light on chloride retention, because diminished chloride excretion does not produce an increased concentration of the salt in the blood and tissues owing to the simultaneous and inseparable retention of water, which acts as a diluent.

It may be mentioned in passing that a primary retention of water would also lead to a compensatory retention of salt, and it is believed that under certain circumstances this may occur, although, generally speaking, it may be said that in oedema water is retained to dilute the salt and not salt to salinate the water.

A normal kidney excretes the day's intake of salt (15 to 20 grams) within the next twenty-four hours, and in the non-oedematous forms of renal disease—that is, the granular kidney—salt is excreted equally well, the capability of excreting salt being quite independent of the power of excreting many other substances, such as urea, uric acid, and potassium iodide. The power of excreting phosphates and sulphates is, unlike that of excreting chlorides, roughly parallel with the capability of excreting urea. Salt retention is a characteristic of the oedematous or tubal type of nephritis, just as urea retention is characteristic of the chronic interstitial or cirrhotic type.

The accurate determination of salt retention is not such a simple matter as the estimation of urea retention. The amount of salt which will be excreted after a weighed dose of sodium chloride depends a great deal on the amount of fluid present in the tissues of the body at the time of administration. If the body is low in fluids, the salt may actually be retained, the body fluids correspondingly augmented, and the weight raised. So, for the estimation of salt retention, an equilibrium must first be established between intake and output by careful dieting, and then large doses of salt must be repeated on successive days. If salt is retained, an increase in weight at once takes place, owing to the retention of fluid; but in a healthy individual this increase is limited to a few days; it then ceases, and there is excreted in the urine a quantity of salt equivalent to that taken by the mouth. On the other hand, if salt retention is present, dropsy should ensue, and perhaps also serous effusions. The test obviously is a difficult one to apply, so for ordinary purposes reliance is placed simply on the estimation of the chlorides in the urine.

The following case, although not one of nephritis, is a striking example of the results of flooding the tissues with an excess of salt:

On November 4th, 1916, a girl aged 2½ years was brought to St. Thomas's Hospital on account of oedema of the feet and face. Her only previous illnesses were whooping-cough and chicken-pox.

For three weeks she had shown slight nasal catarrh; recently her face had been swollen in the mornings, and latterly her feet had become swollen also.

Physical examination revealed nothing to account for the oedema. The urine was free from albumin, its specific gravity was 1020; it was concentrated and full of urates. No sugar. As the oedema persisted and the urine remained non-albuminous, she was admitted for further observation. But meantime an important fact had come to light—it had been ascertained that the child was inordinately fond of salt, and would, when opportunity offered, empty the salt cellar as if it were a sugar basin.

On admission the temperature was 100°, but fell to normal before night. Slight bronchitis with some respiratory acceleration was present. The urine was still concentrated, but free from albumin. The child was placed on milk diet.

In a day or two sharp crepitation made its appearance in the lungs and gradually extended in area and intensity. The temperature became febrile. There was still no albumin, and the quantity of urine averaged 6 or 7 oz. a day—that is, at least a third, or possibly a fourth, of what it should have been.

The pulse and respiration rates gradually increased, the

former reaching 172 and the latter 96. Death of the asphyxial type occurred after she had been under observation for eight days.

Post-mortem Examination.

The legs were swollen and oedematous. There were several adhesions between the chest walls and lungs on both sides, evidently of old standing. With the exception of the lungs the thoracic and abdominal organs showed no gross signs of disease. The lungs were subcrepitant, and pitted all over with small cavities, on the average not much larger than the head of a pin.

I am indebted to Professor S. G. Shattock for the following histological report:

Kidney.—There are no marks of glomerular inflammation. The capillary endothelium is normal, and there is no exudate within the capsules. In all the convoluted tubules the epithelium is remarkably and coarsely vacuolated, but without destruction of the cell nuclei. The lumina of the tubules are in many cases obliterated by a coarse open spongework formed by the septa of the vacuolated parts of the cells. In some cases the whole of the cell is vacuolated, but as a rule the basal moiety containing the nucleus is affected to a lesser degree or not at all. There is nowhere any coagulated exudate within the tubules. Nor is there any vascular congestion. The condition present, therefore, cannot be viewed as one of inflammation, but represents one of dropsical vacuolation of the epithelium.

Lung.—The pulmonary alveoli and the infundibula, as well as certain of the bronchioles, are filled with cells. These cells within the alveoli and infundibula consist partly of proliferated epithelium but largely of polymorphonuclear leucocytes. There is no coagulum entangling the cells of the kind met with in a croupous inflammation. The condition may be classed as one of bronchopneumonia. Distributed through the solidified substance there are a conspicuous number of sharply defined spaces of circular, polygonal or elongated form which represent dilated infundibula and dilated bronchioles. With few exceptions the epithelium lining the spaces has been lost by desquamation. There is no necrosis in progress, and the condition may be regarded as one of infundibulo-bronchiolectasis.

The lesson to be learned from such cases as this is that excess of salt will produce subcutaneous oedema, and also oedema of the cells and framework of parenchymatous organs. Cases of a somewhat similar character have at times been reported by other observers. Also it is well known that heavy saline infusions can induce hydrothorax, hydroperitoneum, oedema of the lungs, and sometimes, too, of the subcutaneous tissues.

There being no doubt about the presence of salt retention in certain types of nephritis with oedema, the tendency to look upon this retention as the cause of the dropsical manifestations is natural. This is the view strongly taken by Widal and his school, a view which has supplanted the older idea that oedema is due to the inability of the kidneys to secrete sufficient water. A third hypothesis must be mentioned—that of Cohnheim—which attributes the oedema to an increased permeability of the walls of the capillary vessels, induced by malnutrition or by the retention of toxic products. But Cohnheim's view has not survived the test of experiment; this increased capillary permeability has been proved not to exist.

Widal's salt retention hypothesis is attractive, and there is no doubt that under certain circumstances a salt-free diet is beneficial in the treatment of dropsy and oedema, whilst administration of excess of salt will aggravate the condition. Clinically, however, this line of treatment has not led to the results which might have been expected. Moreover, in some conditions in which analysis of the urine indicates that salt retention is present, dropsy and oedema fail to appear; it is possible, however, that in such cases salt is being vicariously eliminated by the bowel.

There is strong reason to believe that something more than mere salt retention lies at the root of renal dropsy.

THE TREATMENT OF CHRONIC RENAL DROPSY.

Chronic parenchymatous nephritis—the large white kidney—affords the most striking example of oedema and serous effusions associated with renal disease. Sufferers from this disease become absolutely waterlogged, and there is no doubt that in many cases this oedema is an important factor in producing death, which is said, as a rule, to occur within two years or less of the recognition of the disease. Not only are mechanical disabilities produced by the effusions, but the waterlogged organs, subcutaneous tissues, and serous sacs also fall an easy prey to secondary inflammatory complications.

The dropsical effusions can, of course, be removed by mechanical means—that is, by puncture of the skin and subcutaneous tissues, by tapping the abdomen, and by aspirating the chest—but these procedures are merely palliative; they have to be repeated periodically, and, in addition to the discomfort inflicted, they carry a very real risk of septic infection. Attempts to reduce the dropsy by means of diuretics, diaphoretics, and purgatives are notoriously ineffectual, and the use of a salt-free diet, as above mentioned, has not led to the results expected.

There is, however, a means by which the effusions and oedema can be got rid of. This method we owe to Dr. Albert Epstein of New York, who, in an article published in the *American Journal of Medical Sciences* in November, 1917, urged the efficacy for this purpose of a dietary rich in proteins but poor in fats. Deferring for the present a consideration of the facts which led him to adopt this revolutionary method of dieting in nephritis, and also of its possible sequel, let me first give the details of an illustrative case:

A. H., a porter 36 years of age, was under my care in St. Thomas's Hospital from February 1st, 1918, until March 3rd, 1919—a period of fourteen months—and is still under observation as an out-patient. He is a married man with two healthy children. His only previous illness was an attack of rheumatic fever fourteen years ago. There is no history of renal disease in his family. His four brothers and sisters are healthy and his parents are said to have died "natural deaths." Despite careful inquiries no cause for nephritis could be traced. There was nothing in his occupation which had any bearing on it; his habits were apparently above reproach; no history of venereal disease was obtained, and the Wassermann reaction was negative. The mouth contained five septic stumps, which were at once removed.

The first sign of his illness was slight oedema of the feet and puffiness of the eyelids, noticed seven weeks before he was admitted to hospital. The dropsy steadily increased. He began to suffer from frontal headaches and developed a rather troublesome cough. He noticed that he passed but little urine.

When admitted, both legs were much swollen and pitted readily. A large cushion of oedema occupied the lumbar region. The abdomen was full of fluid and the face puffy. There were no obvious cardio-vascular changes and no retinitis or oedema of the optic discs. The blood pressure was 145 mm. The chest was moderately emphysematous and the lung bases showed signs of oedema. There was a small quantity of slightly blood-stained muco-purulent sputum, which, however, was free from tubercle bacilli. Both pulse and respirations were slightly accelerated. The temperature was normal. The urine was acid and clear; its specific gravity varied from 1015 to 1025, and the daily quantity averaged a little over 30 ounces; there was a dense cloud of albumin on boiling but no blood; a few granular and epithelial casts were found.

The ascites increased, and slight pleural effusions appeared on both sides. The penis and scrotum became highly oedematous, and at the same time the oedema of the legs, which at first was below the knees, invaded the thighs, the patient becoming completely waterlogged. The only uraemic symptoms consisted in the headache already mentioned and an occasional tendency to vomit.

For the first month his diet consisted of three pints of milk, a certain amount of carbohydrate, and occasionally fish; later some fowl was added. In succession, pituitary extract, caffeine citrate, diuretin, and a mixture of potassium nitrate, spirits of nitrous ether, and ammonium acetate were administered as diuretics without the slighest response; in fact, the average daily amount of urine diminished instead of increasing.

The bowels were kept well opened, the abdomen was tapped periodically, and the legs were drained by multiple punctures with aseptic precautions.

Diuretics having failed, a strict salt-free regimen was instituted and persevered with for a month, but no increase in diuresis or diminution of the dropsy resulted.

The ascites was such that tapping was necessary on an average once a fortnight. Altogether the abdomen was tapped twenty-one times, an average of ten pints of fluid being removed at each operation. In addition, a considerable quantity leaked from the abdominal punctures, and much escaped from the punctures in the legs.

In August, 1918, an examination of the blood showed no urea retention, but salt retention was pronounced.

In October Epstein's diet was adopted, and salt was allowed in moderation. For the first three weeks no result was apparent, so salt was again withdrawn. Gradually a change became noticeable in the patient's condition, the amount of urine excreted slowly rising and the dropsy gradually disappearing. The annexed table shows the average urinary excretion for successive three-weekly periods:

	Average amount of urine.
First three weeks Epstein diet	27 oz.
Second " " " (no salt)...	46 oz.
Third " " " "	51 oz.
Fourth " " " "	67 oz.
Fifth " " " "	77 oz.
Sixth " " " "	81 oz.
Seventh " " " "	108 oz.
Eighth " " " "	113 oz.

Only three tappings of the abdomen were necessary after commencing the diet, and the oedema of the legs, thighs, scrotum, and penis gradually subsided; the lumbar cushion also disappeared. A marked loss of weight, due no doubt to the elimination of fluid, was later succeeded by a steady gain as nutrition improved. Nothing could be more satisfactory than the way in which the fluid which waterlogged this patient was induced to disperse. His subsequent history is, however, well worth noting. It is over a twelvemonth since his last tapping. He continues his diet on much the same lines, remains free from ascites and oedema, has put on flesh and looks and feels much better, but his urine is still highly albuminous, and his blood pressure has gradually risen until the systolic pressure is 220 mm. of mercury.

There can be no doubt that the institution of a diet on Epstein's lines was completely successful in restoring this man to a condition of comfort when the ordinary means of treatment combined with salt deprivation had failed. Now, Epstein, as a result of his investigations on renal disease, came to the conclusion that the amount of protein in the blood was very seriously diminished in chronic parenchymatous nephritis, and that this diminution was the direct result of the loss of albumin in the urine. As the result of this there is a diminution in the osmotic pressure of the blood—that is, of the power of the blood to attract fluid from the tissues—a state of affairs which favours the imbibition and retention of fluid by the tissues themselves. Thus he accounts for the oedema and serous effusions met with in chronic parenchymatous nephritis, a form of renal disease in which it is well known that albuminuria is profuse.

Before specifying his diet another point has to be mentioned: Not only did he find blood protein deficient in these cases, but he also detected a remarkable increase in the lipoid—that is to say, the cholesterin content of the blood, which he attributed to the mobilization of the fatty deposits in the body, and perhaps also to tissue degeneration. Epstein's diet, therefore, is rich in protein and poor in fat to meet these conditions.

EPSTEIN'S DIET.

The daily food value is from 1,280 to 2,500 calories.
Protein from 120 to 240 grams.
Fat (unavoidable) 20 to 40 grams.
Carbohydrates 150 to 300 grams.
The articles used are lean veal, lean ham, whites of eggs, oysters, gelatin, Lima beans, lentils, split peas, green peas, mushrooms, rice, oatmeal, bananas, skimmed milk, coffee, tea, and cocoa.
Of fluid, 1,200 to 1,500 c.cm. are allowed, and the amount of salt is in quantity sufficient to make the food palatable.

Fortunately, at the time when this patient was in St. Thomas's Hospital, Drs. MacLean and De Wesselow were already engaged in their investigation on war nephritis which is being carried on there, and I obtained their ready assistance for the investigation of my case.

Two striking facts emerged: first, during the period of diuresis the already low protein content of the blood plasma tended rather to diminish than to increase; secondly, the urea content of the blood became augmented. The actual figures were as follows:

Date.	Protein in Blood Plasma.	Urea in Blood.
	Per cent.	
October 13th, 1918	6.29	27 mg. per 100 c.cm.
November 20th, 1918	6.20	64 mg. per 100 c.cm.
December 3rd, 1918	6.00	56 mg. per 100 c.cm.
January 3rd, 1919	—	81 mg. per 100 c.cm.
January 22nd, 1919	5.96	63 mg. per 100 c.cm.

These results led Dr. MacLean to infer that, in this instance at all events, Epstein's explanation of the disappearance of the dropsical effusions could not apply, and that the diuresis and consequent disappearance of the effused fluid from the subcutaneous tissues and the serous sacs which resulted from the adoption of the rich protein diet was to be attributed, not to an increased richness of the blood in protein, but to an increase in its urea content, which rose from 27 mg. per 100 c.cm. at the beginning of the new diet to an average of about 60 mg. per 100 c.cm. Urea is known to be a powerful diuretic, and the administration of fairly large doses of urea to patients who suffer from renal oedema has been found to set up a diuresis similar to that which occurred in the case just narrated.

Whether patients who are the subjects of oedematous renal disease can be injured by the adoption of the high protein diet is a question which calls for serious consideration. The institution of such a diet does not appear to increase in any appreciable degree the amount of albumin which is being lost by the kidneys, and which in itself must be a serious drain, but, as we have seen, it does undoubtedly increase the amount of urea, and presumably also the other non-protein nitrogenous bodies, in the blood. The administration of urea in large doses occasionally induces headache, but apparently, in healthy persons at all events, has no appreciable effect in raising the blood pressure. My patient, although free from oedema and serous effusions and making no complaint of headache or other discomfort, shows a gradually increasing blood pressure, which at the last observation has reached 220 mm. of mercury. It is tempting to associate this rise of pressure with the retention of the non-protein nitrogenous substances in the blood, and it is important to determine whether increased blood pressure is the usual sequel of a rich protein diet in such cases. There is some reason to suspect that it is.

At the same time it is well to bear in mind that patients with large white kidneys who survive the oedematous stage are described as passing into a condition comparable to that induced by contracted granular kidneys—that is to say, a condition in which increasing polyuria is associated with pronounced cardio-vascular changes. It might well be urged, therefore, that the present condition of my patient is but the natural result of the evolution of his disease. Whatever be the explanation, the fact remains that the adoption of the high protein diet enables these patients to survive the waterlogged stage and its associated dangers, a survival which experience has shown was rare before this type of diet was adopted.

As regards diet in *acute* nephritis we remain much where we were. A low protein supply is obviously indicated in the early stage of the disease owing to the presence of urea retention. Should dropsy be present, it is also advisable to restrict or eliminate salt, and not to allow *excessive* ingestion of fluids. The old warning against beef-tea and meat extracts is justified since they are rich in both salt and nitrogenous derivatives, whilst the idea that toxic products might be eliminated by considerably increasing the fluid intake is not supported by what we know about the mechanism of the oedema. Milk still remains our staple article of food at this stage, not because it is a non-nitrogenous diet, which it assuredly is not, but because it is easily assimilated, slightly diuretic, and by experience found to be least harmful. When the acute stage is passed, a rather more liberal protein diet appears to do no harm. The addition of some protein to the carbohydrates usually allowed at this stage does not appear to increase the albumin or produce other harmful effects.

As to chronic nephritis of the hydraemic type, Epstein's diet certainly affords slow and steady relief to the dropsical symptoms, but the ultimate outcome is still *sub judice*, whilst in that form of which the granular kidney is the type and urea retention the rule, the established treatment by reducing the protein and extractives is fully corroborated.

THE LIFE-HISTORY OF THE FIRST CASE OF MYXOEDEMA TREATED BY THYROID EXTRACT.

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THE development of the principles and practice of endocrinology during the last thirty years has been rapid and progressive. The practice of this branch of medicine has unfortunately not always been based on sound physiological principles, so that glandular extracts have been given indiscriminately in many conditions with disappointing results. In the case of some preparations there is little evidence that the hormones they are supposed to contain are able to exert their normal physiological action when given by the mouth. It therefore may be

of interest to complete the life-history of the first case of myxoedema successfully treated by thyroid extract—it has recently terminated at the age of 74—as the results obtained in this case not only afforded definite proof that the thyroid gland produced an internal secretion, but showed that the thyroidal insufficiency of myxoedema in man could be made good by maintaining an adequate supply of thyroidal hormones from an external source.

During the war we learned to appreciate more fully the value of the collective investigation of disease for which the aggregation of large numbers of men under military discipline and the co-operation of groups of medical officers provided the opportunity. A striking example of the results to be obtained by this method had, however, already been furnished by the publication, in 1888, of the report of the special committee which was appointed by the Clinical Society[1] in 1883 to investigate the relation of myxoedema and allied conditions to the thyroid gland. The history of the subsequent developments of the treatment of these maladies as a direct result of the work of this committee has just been so clearly given by Mr. Stephen Paget[2] that further reference to it is not necessary. It is, of course, well known that the experimental work of Sir Victor Horsley, which was undertaken at the request of this committee, first definitely proved that myxoedema, cretinism, and cachexia strumipriva were due to loss of function of the thyroid gland. Although at that time it had not been proved that this function was to provide an internal secretion, he suggested that grafting a portion of healthy thyroid gland would be a rational method of treating these maladies.[3] The striking improvement which followed the adoption of this suggestion in Bettencourt and Serrano's[4] case led me to suggest and carry out the treatment of myxoedema by thyroid extract in the case whose complete life-history I now wish to record as an example of the value of observation of individual cases over long periods of time in the elucidation of certain problems in medicine.

Mrs. S., aged 46, was shown at a meeting of the Northumberland and Durham Medical Society on February 12th, 1891.[5] She had had a family of nine children, of whom six were living. At the age of 40 she had a miscarriage, after which she had menstruated once, at the age of 42. When she was 41 or 42 years of age her relations had noticed that she was becoming slow in speech and action, and she herself began to find that it required a great effort to carry on her ordinary housework. The features gradually became enlarged and thickened and the hands and feet increased in size and changed in shape, so that at the time of this meeting she presented the typical features of an advanced case of myxoedema of at least four years' duration. After showing the patient, I stated my intention of treating her with thyroid extract, and described the principles upon which this treatment was based and the reasons for expecting that it would be successful. The treatment was not commenced until two months later, and the following note taken on April 13th, 1891, describes her condition at that time:

> She complains of languor, a disinclination to see strangers, and great sensitiveness to cold. The temperature is subnormal, and varies between 95.6° and 97.2° in the mouth. The pulse varies between 60 and 70. The face is blank and expressionless and the features are notably thickened. This change is well seen in the alae nasi and lips. The subcutaneous connective tissue of the eyelids is so swollen that she finds it difficult to look upwards. There is also considerable swelling beneath the eyes and of the cheeks. The hands and feet are both enlarged; the former have that peculiar shape which has been described as spade-like. The skin is very dry, there is no perspiration, and the superficial layers of the epidermis are continually being shed as a fine white powder. The hair is very fine in texture, and a considerable quantity of it has been lost. She is slow in answering questions; all her actions are slow and are performed with difficulty. The speech is remarkably slow and drawling and the memory is bad. No thyroid gland can be felt in the neck. The urine contains no albumin or sugar.

The experimental nature of the treatment was explained, and the patient, realizing the otherwise hopeless outlook, promptly consented to its trial. In order to ensure that the extract was properly prepared, the thyroid gland was removed from a freshly killed sheep with sterilized instruments and conveyed at once in a sterilized bottle to the laboratory where the glycerin extract was prepared, as elsewhere described.[6] This extract was afterwards included in the *British Pharmacopoeia* of 1898 as "liquor thyroidei."

At that time care in obtaining the actual thyroid gland was necessary, as was shown by the experience of the late Dr. Michell Clarke, who, in the course of a discussion on a paper read by me at the annual meeting of the British Medical Association at Nottingham in 1892,[7] stated that he had carried out the treatment without any benefit in two cases. Several years later Dr. Clarke kindly told me he had subsequently discovered that his want of success was due to the fact that the butcher had been supplying thymus instead of thyroid gland for the preparation of the extract. Even in recent years some thyroid preparations have proved to be inactive. In the treatment of this first case a hypodermic injection of 25 minims of the extract was given twice a week at first, and later on at longer intervals. The patient steadily improved, and three months later, on July 13th, the condition was thus described:

> The swelling has gradually diminished, and has practically disappeared from the backs of the hands, the skin over them being now loose and freely movable. The lips are much smaller. The swelling of the upper eyelids has diminished so much that she can look upwards quite easily. The swelling beneath the eyes and of the cheeks has also much diminished. The face consequently, as a whole, has greatly improved in appearance and has much more expression, as many of the natural wrinkles, especially about the forehead, have returned. The speech has become more rapid and fluent, the drawl being scarcely noticeable at the present time. She answers questions much more readily, the mind has become more active, and the memory has improved. She is more active in all her movements, and finds that it requires much less effort than formerly to do her housework. She now walks about the streets without any hesitation without a companion.
>
> She has menstruated normally during the last six weeks at the regular interval. For the last four weeks the skin has been much less dry and she perspires when walking. The hair remains as before. She is no longer so sensitive to cold. Unfortunately owing to circumstances a daily record of the temperature has not been kept, but out of four observations that have been made lately, about 11 a.m., three times the temperature has been 98.2° F. and once 97.4.°

After this the injections were given at fortnightly intervals, and later on, when the oral administration had been shown by Dr. E. L. Fox and Dr. Hector Mackenzie[8] to be equally efficient, she took 10 minims by the mouth six nights a week, so that 1 drachm was consumed in the course of each week. On this dose she remained in good health, and free from the signs of myxoedema. I have only seen this patient once during the last eleven years, but Dr. Helen Gurney, medical registrar at the Royal Victoria Infirmary, Newcastle, has kindly kept her under observation, and has informed me that she continued to take liquid thyroid extract regularly until early in 1918, when it became difficult to obtain, so that she was given dry thyroid extract in a tablet instead. She enjoyed excellent health until early in 1919, when she developed oedema of the legs, and died in May of that year at the age of 74 from cardiac failure.

This patient was thus enabled, by the regular and continued use of thyroid extract, to live in good health for over twenty-eight years after she had reached an advanced stage of myxoedema. During this period she consumed over nine pints of liquid thyroid extract or its equivalent, prepared from the thyroid glands of more than 870 sheep.

The results obtained in this case show that:

1. The thyroid is purely an internal secretory gland.
2. The symptoms of myxoedema can be entirely removed, and the patient maintained in good health, by the continuous administration of thyroid extract.
3. The functions of this gland in man can be fully and permanently carried on by the continued supply of thyroidal hormones obtained from one of the lower animals.
4. The duration of life need not be shortened by atrophy of the thyroid gland provided this substitution treatment is fully maintained, and so under these circumstances the prognosis of myxoedema is very good.

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THE USE OF ANTISTREPTOCOCCIC SERUM IN QUINSY.

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Five years ago it fell to my lot to treat a case of double quinsy which did not run the usual course. The report on a swab from the throat was: "Diphtheria bacilli not present; abundant growth of streptococcus." The patient, a man aged 32, was very ill; 2,000 units of antidiphtherial serum were injected when he was first seen. The second tonsil developed an abscess on the third day, and there was an abscess of the soft palate. Eventually the right cervical glands suppurated; he developed also extensive neuritis of the upper and lower limbs. He was invalided for eight months, and ultimately recovered. The ordinary treatment of quinsy was unavailing.

On the assumption that the primary cause was a streptococcus, it was determined to treat any subsequent cases of quinsy with antistreptococcic serum. Cases were selected in which the abscess had not perforated and in which the conditions were definitely acute.

The following routine was adopted: Serum (10 c.cm.) was injected at once; if there was any doubt of diphtheria 2,000 units of antidiphtherial serum were added. The injection was made in the thigh, hypodermically. As regards drugs, the usual initial purge was given; and thymol, carbolic lotion, and hydrogen peroxide were used for washing out and swabbing the mouth and throat. Ten cases only were treated.

A.-S. = Antistreptococcic serum, 10 c.cm.
A.-D. = Antidiphtherial serum.

CASE I.—*Double Quinsy.*

J. C., aged 31, farm wagoner, gave a history of quinsy once before. He had been ill one day. The temperature was 103.8° F. Both tonsils were much enlarged, the left most markedly; they met in the middle line. The soft palate was swollen and congested. A glairy translucent membrane covered the inflamed surfaces. A.-S. was injected.

Next morning he was improved. He could swallow his saliva and drink tea with some difficulty. He said that the acute pain over the tonsils and at the angles of the jaw had appreciably lessened some six hours after the injection. He had perspired freely throughout the night.

The left tonsil discharged twenty-four hours and the right forty-eight hours after the injection. The soft palate perforated and discharged a short time after. He went out for the first time on the seventh day. Between six and seven days after the injection urticaria developed all over the body and limbs. The throat was examined some months later; both tonsils were enlarged and pitted; operation was advised, but was refused.

CASE II.—*Double Quinsy.*

A farmer, aged 38, had had quinsy on one previous occasion. He had been ill one day. Both tonsils were enlarged and inflamed, as also were the fauces and soft palate. There was a translucent glairy membrane over the inflamed surfaces. The temperature was 103.8° F. A.-S. injected at 5 p.m.

Next morning he had improved. He could swallow fluids with some difficulty. He had perspired freely, and complained of a frontal headache. The acute pain in the throat had been appreciably eased during the night. The tonsils discharged some thirty-six hours after the injection. The rash appeared on the seventh day after the injection. He was out in the harvest field on the sixth day superintending his men.

CASE III.—*Double Quinsy.*

A soldier, aged 23, with no previous history of quinsy, had been ill two days. The temperature was 104° F. Both tonsils, the fauces, and soft palate were swollen and inflamed. The teeth were very septic—stumps with an overlying dental plate. A.-S. injected.

There was appreciable relief of pain in about ten hours. The tonsils discharged on the second day after the injection, the fourth day of the illness; the congested soft palate did not form an abscess. Urticaria developed on the seventh day after the serum. The man was not able to get about until the tenth day from the onset. The mouth was very much inflamed, with gingivitis and sordes.

CASE IV.—*Double Quinsy.*

F. P., aged 28, gave no history of a previous attack. He had suffered from "sore throat" for two days, but he had been able to go about. The temperature was 103.6° F. There was marked swelling of both tonsils, and of the soft palate; there was a glairy membrane over the inflamed surfaces. A swab was sent for cultivation. A.-S. 5 c.cm., with 2,000 units of A.-D., were injected at about midday. He experienced some slight relief by 7 p.m.

Next day the temperature was 101.8° F., and he was in great distress. A similar dose of both serums was injected. By the evening, eight hours later, there was marked relief. The abscesses were discharging pus on the fifth day of the illness. Urticaria developed in about six and a half days after the injection. The rash spread over the arms and thighs—first appearing there—thence over the whole body and head. It was apparent on the lips, and the eyelids were said to have been oedematous. The result of the swab was: "Diphtheria bacilli not present; a growth of streptococcus."

The man was able to do light office work on the eleventh day after the onset of his illness.

CASE V.—*Double Quinsy.*

A farm labourer, aged 24, had had no previous attack. Both tonsils were enlarged and reddened. A.-S. injected.

He said that the pain was much relieved some hours afterwards. Both tonsils discharged on the second day after the serum, the fourth of his illness. Urticaria appeared round the injection site and over the abdomen on the seventh day after injection. Operation later was refused.

CASE VI.—*Right Quinsy.*

Housemaid, aged 25, had had quinsy once before. She was first seen on the second day of her illness. The right tonsil was much swollen; the left swollen and inflamed, but not so markedly. The pain was on the right side. The temperature was 104° F. A.-S. was injected.

She said that the pain was appreciably relieved some ten hours afterwards. The right tonsil discharged on the fourth day of her illness. The left tonsil did not suppurate. Urticaria was said to have appeared on the seventh day after injection, but I did not see the rash. She left her situation on the eighth day after her illness and went home to another locality.

CASE VII.—*Right Quinsy.*

A lad, aged 17, who had had no previous attack, had been ill one day. The temperature was 104.2° F. A.-S. injected. The pain was much improved next morning. The tonsil discharged on the third day after injection, and urticaria appeared on the seventh day after.

CASE VIII.—*Left Quinsy.*

A lad, aged 16, was seen first on the third day of his illness. The temperature was 104.6° F. A.-S. injected. The pain was appreciably relieved some hours afterwards. The left tonsil discharged on the fourth day of his illness. Urticaria appeared on the seventh day after the serum; the rash was "out" for about twelve hours.

CASE IX.—*Right Quinsy.*

A fireman, aged 24, who gave no previous history of quinsy, had been ill one day. The temperature was 103.8° F. A.-S. injected. The tonsil discharged on the third day of his illness. The pain over the tonsil was much relieved before the abscess discharged. Urticaria appeared on the sixth day after the injection; it was confined to the right thigh and leg. He was off work for fourteen days.

CASE X.—*Left Quinsy.*

J. C., the same patient as recorded in Case I, two and a half years after his last attack developed an abscess of the left tonsil. He was seen the day after the onset, when the temperature was 103.6° F. Ten c.cm. A.-S. serum was injected. The left tonsil discharged on the fourth day of his illness. He again experienced definite relief of his pain some hours after injection. Urticaria appeared on the sixth day afterwards, but he thought the rash was not so acute as on the previous occasion.

This man agreed to have his tonsils removed, but he left the district shortly after without submitting to the operation.

It would appear that the most definite result obtained in these cases was the relief of pain—if an opinion may be formed from the small number treated with antistreptococcic serum. In all, pain was appreciably relieved in from six to twelve hours; the more or less acute pain when swallowing was eased some hours after that, but within a definite time before the abscess ruptured.

In no case was incision of the abscess required by reason of the severity of the symptoms, and in all so treated there was pus discharging from the abscess on the fourth day of the illness; except in Case IV, in which the discharge was on the fifth day.

The temperature was as a rule taken in the axilla, when there was marked distress. The temperature approximated to the normal one or two days after the serum injection. A four-hourly chart would have shown the serum reaction, but it was not possible to construct one because not one of the cases had a nurse sufficiently trained.

It is to be regretted that calcium lactate was not given three or four days after the serum, so as to have prevented or modified the urticaria, but at the time I did not know of the proper method of its administration.

The serum used throughout was antistreptococcic, polyvalent, manufactured at Evans and Webb's laboratory.

THREE CASES OF ACUTE PERFORATION OF DUODENAL ULCER: LAPAROTOMY: RECOVERY.

BY

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THE notes of these cases illustrate the importance of early operation to secure a successful issue.

CASE I.

B. M., aged 32, a private A.I.F., was brought into hospital in the early hours of the morning of October 13th, 1919, cold and collapsed; he vomited some coffee-grounds fluid as he was being put to bed. He gave a history of being first taken ill with pains in the upper part of the abdomen on October 6th, and being sick once or twice. The pains came on worse two to three hours after taking food. He reported sick on October 7th, and was given a "dose of medicine." On October 8th he felt better, but vomited several times during the day, the vomiting relieving the pain in the epigastric region. He seems to have dragged about until the evening of October 12th, when he had a sudden acute pain just above the umbilicus, to the right of the middle line, and was very sick. On admission the whole abdomen was very hard and rigid, and abdominal respiratory movements were absent. There was acute tenderness above the umbilicus, distinctly greater towards the right of the middle line. There was no distension of the abdomen. Liver dullness was absent.

He was prepared for operation, and as soon as possible laparotomy was performed through the right rectus muscle. Immediately on opening the peritoneum gas escaped, as well as a certain amount of bile-stained fluid. The perforation was soon found in the first part of the duodenum, on its anterior aspect, through which gas and fluid were escaping. As much fluid as possible was mopped out of the right kidney pouch of the peritoneum and the perforation closed, a small tag of omentum being sutured immediately over the opening to strengthen the closure. A wick drainage tube was placed in the right kidney pouch and the incision closed. A second opening was made in the middle line, below the umbilicus, and a considerable quantity of thick bile-stained fluid was mopped out of the pelvis, into which a second wick drain was passed and the incision closed. This ulcer was found to be of quite recent origin, there being no marked hardness of its edges and very little recent lymph about.

This patient made an uninterrupted recovery; he did not vomit once after the operation down to his departure to a convalescent home on November 21st, 1919.

CASE II.

C. T. W., aged 22, a bombardier in R.F.A., was admitted to hospital on the evening of November 27th, 1919, in a mildly collapsed condition with pain in the upper part of the abdomen. He gave a history of having had "indigestion pains" of a griping nature for a week, but with no vomiting. He had taken aperient medicine which had acted. The pains were worse about four hours after food. On the morning of November 27th, 1919, they became suddenly more severe, and he reported sick. Marked rigidity of the whole abdominal wall was found with tenderness above and to the right of the middle line. During the examination he vomited some thin greenish fluid. There was no distension of the abdomen, but the liver dullness was absent.

Laparotomy was performed the same evening, but only after some delay, owing to patient refusing operation, as he said he did not feel ill enough and would give permission, if necessary, in the morning after he had had a good sleep. An incision was made through the right rectus muscle; on opening the peritoneum, gas escaped and a large quantity of fluid had to be mopped out of the right kidney pouch and elsewhere before any perforation could be found. It was seen to be situated at the junction of the first and second portions of the duodenum. There was much recent lymph about and the ulcer was hard edged and difficult to get at, partly owing to its position and partly to bile-stained fluid constantly welling up through the perforation. After closing this and soaking up as much fluid as possible in the right pouch and pelvis, both these regions were drained with wick drainage tubes and the incisions closed. A very large quantity of fluid had gravitated into the pelvis in this case.

The patient was very troubled for several days following the operation with vomiting and distension. Once the bowels had acted, however, he progressed quite happily, and was discharged from hospital on December 31st, 1919, to convalesce.

CASE III.

J. B., aged 34, a gunner, R.G.A., was brought into hospital at about 6 p.m. on January 17th, 1920. He stated that he had abdominal discomfort for three weeks, with pain, a feeling of nausea, distension above the level of the umbilicus, and occasional attacks of vomiting. The pain was worse several hours after food. He was able to carry on his duties until the morning of January 17th, 1920, when he was seized with violent pain about the epigastric region whilst he was sweeping out his hut. He vomited and went to lie down. The pains got worse, and he began to feel ill and reported sick. On examination the abdominal wall was very rigid all over, with considerable tenderness in the epigastrium almost directly in the middle line. There was decided distension of the abdomen, with dullness marked towards the right loin. The liver dullness was completely absent. He vomited some greenish fluid.

As soon as the patient could be got ready laparotomy was performed through the right rectus muscle above the level of the umbilicus. When the peritoneum was opened gas escaped, followed by a large quantity of thickish green fluid, which welled up from the right kidney pouch as well as from the lower part of the abdomen. The ulcer was soon found in the first part of the duodenum and closed. It was of recent origin, the edges being free from hardness, and hardly any lymph was about except on the liver and omentum. Both the right kidney pouch and the pelvis were drained as in the other cases.

Except for some slight suppuration at the upper end of the main incision, this patient recovered extremely well, considering the history he volunteered of a profound liking for alcohol. He is now quite convalescent.

The recovery of these three patients was, in my opinion, largely due to the great care and skill bestowed on them by the nursing staff, to whom I am greatly indebted.

For permission to publish these notes I have to thank Lieut.-Colonel Langford N. Lloyd, C.M.G., D.S.O., R.A.M.C., commanding Military Hospital, Tidworth.

PAPILLIFEROUS CARCINOMA OF THE THYROID GLAND.

BY

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PAPILLIFEROUS CARCINOMA is uncommon at any age, and must be extremely rare in a child of 13. It presents also certain clinical features of importance in prognosis to which attention may be called.

C. S., a girl aged 13, was seen first at the out-patient department of the Bradford Children's Hospital in October, 1918. Her mother stated that three years earlier a swelling appeared in the middle line of the neck; for ten months it had been noticed that not only was the swelling getting bigger but that additional swellings had appeared on the right side of the neck, and these had grown larger. There had been no pain, cough, dyspnœa, change in the voice, or difficulty in swallowing, and no loss of weight.

Examination showed a tumour confined to the right half of the thyroid gland, moving on deglutition, but adherent to the trachea. It appeared to surround the carotid sheath rather than displace it. It was peculiarly hard and knobby to the touch, and was wholly above the sternum. In addition there were three large easily movable and discrete lymphatic glands in the right side of the neck. The pupils were equal, and the vocal cords moved normally.

The patient was admitted to hospital and the enlarged lymphatic glands were removed without difficulty, as they shelled out with the greatest ease. Sections examined microscopically were remarkable in that there was no trace of any true lymphatic tissue to be seen, the whole gland substance being replaced by metastases from the primary growth in the thyroid gland.

A month later the right lobe of the thyroid gland was removed through a transverse incision. This procedure was more difficult as the growth was firmly adherent to the trachea and carotid sheath. The superior thyroid artery was first secured and ligatured, and the tumour was then attacked from below. With difficulty it was separated from the trachea and carotid sheath; during the process some of the contents of the tumour escaped. The whole area of operation was well protected with sterile gauze so that soiling of the wound was prevented. Branches of the inferior thyroid artery were ligatured as they were divided and the recurrent laryngeal nerve was carefully preserved. The resection completed, the wound was approximated with buried catgut sutures and the skin brought together with a subcutaneous stitch of fishing gut. Drainage was not employed. The wound healed by first intention and the subcutaneous stitch was removed on the sixth day.

Microscopical examination of the tumour showed it to be identical in structure with that in the lymphatic glands—that is, it was a true papilliferous carcinoma. The tumour itself was hard to the touch and contained on its surface numerous dark-coloured irregularities resembling cysts into which haemorrhage had occurred. On opening these a sanious fluid escaped, and slight pressure caused the exudation from them of a yellowish caseous material, which proved to be intracystic papilliferous growth. This was the naked eye structure of the tumour throughout, and in it no normal thyroid tissue appeared to exist. It was evidently these tense cystic structures that gave the knobby, irregular feel to the tumour.

In places where the tumour was firmly adherent to the trachea and carotid sheath this seemed to have come about in the following way. The cyst wall had ruptured and the papilliferous growth had directly grafted itself on to these structures.

The naked eye appearance of the lymphatic glands was interesting. On cutting them across they presented a peculiar arborescent appearance, and on squeezing them their contents escaped as a caseous, yellowish material.

It is now three months since I operated upon the child, and at present there is no sign of any recurrence and she is perfectly well.

The only other case I have seen of this disease was that of an elderly lady over 70 years of age. A portion of the thyroid gland had been removed eight years previously, and proved on section to be a papilliferous carcinoma.

Eight years later she had an extensive enlargement of the lymphatic glands on one side of her neck. They were easily removed, and on section proved to contain metastases from the growth removed eight years previously. This case was under the care of Mr. James Berry, who very kindly asked me to assist him at the latter operation.

During the six months in which I was Mr. Berry's house-surgeon, and in which period I saw many cases of goitre, this was the only instance of papilliferous disease. Very little has appeared in the literature about this condition, and the chief points of interest with regard to it, in addition to its extreme rarity, are that it usually occurs in patients over 40 years of age, and that it is usually far less malignant than the ordinary carcinomata, the history often extending over many years. For a long time these tumours show very little tendency to infiltrate; the metastases are local and situated in the glands of the neck, and they may appear years after the removal of the original growth. The infected glands remain movable and discrete, and their removal is easily accomplished. The original tumour, if removed before infiltration has occurred, shows little tendency to recur.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PROLONGED RETENTION OF FOREIGN BODY IN THE CORNEA.

A MAN, aged 21, applied for treatment at this hospital for pain in his right eye. There was some pericorneal injection, and situated in the central region of the cornea was a leucoma, which at the centre was brownish and looked necrotic. On further examination with the oblique light a metallic glitter was seen, and a foreign body of iron or steel 1½ mm. long and ½ mm. broad was removed from a distinct cavity in the centre of the leucoma.

The history showed that a hot metallic fragment entered the patient's eye in 1915, at which date the foreign body was not removed. This I have been able to verify by old hospital notes. Subsequent to this date no foreign body had entered the eye.

Between 1915 and 1920 the fragment remained in the cornea with no inconvenience to the patient except for the presence of the leucoma, which seems to have formed a fibrous capsule round the foreign body; ultimately the fragment became exposed by a natural process of ulceration.

I have not been able to find in the literature any case in which a metallic foreign body lay dormant in the cornea for so long a period as five years without causing any inconvenience to the patient.

I am indebted to Mr. C. Walker, F.R.C.S., surgeon to the hospital, for permission to publish this case.

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A CASE OF CERVICAL ABORTION.

A. B., aged 29, was admitted to Dundee Royal Infirmary, under the care of Dr. R. C. Buist, with bleeding of one week's duration, following a two months' period of amenorrhœa. She had had three miscarriages, the last nine months previously. On this occasion two days before admission she had pain in the lower part of the abdomen and back, and sharp bleeding came on.

On examination the cervix appeared in the vagina as a soft cystic swelling, about 2 in. in diameter, and above it the body of the uterus could be felt, empty and contracted. The external os was closed; only a very small part of discoloured blood-clot was protruding.

The os was dilated instrumentally to admit the finger, which entered a smooth cavity containing a soft mass. Beyond the cavity the finger entered a passage, which opened to meet it. This was recognized as the cavity of the uterus, the contracted body of which could be felt also bimanually. The soft mass was loose, except for a strand of slender tissue, which continued into the cavity of the uterus. As this strand did not separate easily, the cervix was plugged with flavine gauze. This was removed at the end of twenty-four hours. On examination twenty-four hours later again the cervix was found to be empty and flaccid, and the examining finger in the cervical canal could feel the cavity of the uterus leading off from it. The ovum had escaped unobserved.

The case is peculiar in the comparative infrequency of this form of abortion, and in that the patient was not a primipara, and there was no stenosis of os.

GLADYS J. C. RUSSELL, M.B., Ch.B.
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Reports of Societies.

CHRONIC HALLUCINATORY PSYCHOSIS.

AT the quarterly meeting of the Medico-Psychological Association of Great Britain and Ireland, held at 11, Chandos Street, London, on February 24th, under the presidency of Dr. BEDFORD PIERCE, Professor R. HUNTER STEEN, M.D., read a paper on chronic hallucinatory psychosis, founded upon a series of cases in which the principal symptom was the presence of hallucinations. As the hallucinations caused slight depression, some of the cases might be included under melancholia, while the development of delusions of persecution might lead to a provisional diagnosis of paranoia. Others, again, might be swept into the wide net of dementia praecox. He set out to show that there were hallucinatory cases that could be grouped together into a well defined clinical entity, for which he proposed the term "chronic hallucinatory psychosis." The most prominent of the hallucinations were auditory. The patient might for years recognize that his hallucinations were morbid and unaccountable. These patients could not be termed insane, hence he preferred the word "psychosis" to "insanity." In the absence of an explanation the patient tried to account for their presence, and a delusion resulted, mostly one of persecution. In the early stages such a patient was quiet and orderly and his memory was good. The author quoted several typical cases. In most of them—for it could not be regarded as a rare affection—careful research into the family history revealed a strong hereditary tendency to nervous instability. It seemed an affection of adult life, usually beginning between 30 and 50. It was met with mostly in women, and not those of the lowest rank of life. The special morbid anatomy of the condition was unknown. Not one of Dr. Steen's cases had died, and he knew of no published accounts of *post-mortem* examinations in such cases.

Etiology, Diagnosis, Treatment.

The phenomena could be best understood if approached from the psychical side purely, though theories had been advanced founded upon material conceptions. A hallucination was the result of dissociation of the mind, directly produced by a mental conflict which had been sternly repressed, perhaps for a long time, in a person of congenitally unstable mind. Sleeplessness was not prominent except in the later stages. The expression became anxious, a listening attitude might be noted, and the voices might be conversed with; violence was sometimes threatened, and suicide suggested. Though there were periods of remission, on the whole the disease steadily progressed in intensity, and having reached its zenith, remained stationary for several years. Dr. Steen discussed the differential diagnosis of the condition from general paralysis of the insane, the manic-depressive group, true melancholia, the secondary and organic dementias, and paranoia, the last named being the most difficult to differentiate. The earlier a case was seen the more hopeful the outlook. When delusions had developed, but little could be done to avert chronicity. The general health was not affected, and there appeared to be no danger of terminal

dementia. In the early stages change of environment sometimes did good. Rest from work, freedom from anxiety, and change of air and scene should be advised; plenty of nourishing food should be taken, and the bowels kept regular. In some cases it was well to give an occasional hypnotic to secure sleep. If, however, small doses of the bromides or hydrobromic acid led to no improvement, a thorough mental examination must be made; it would probably bring to light a mental conflict which had caused the dissociation. The present difficulty of getting into touch with these cases in the early stage was likely to be less in the future, with the multiplication of mental out-patient departments attached to large hospitals.

The PRESIDENT did not consider that Dr. Steen had quite established the claim to regard the malady he described as a separate disease from paranoia. Paranoia was shown by Dr. Percy Smith, in his presidential address, to be an exact clinical entity. Was it possible for a mental conflict to produce dissociation?

Dr. MENZIES said this type of case became very demented in the course of twenty or twenty-five years, the patients becoming ordinary chronic lunatics. At necropsy more or less thickening and chronic resolution was always found. The cases were first called paranoiacs, and then chronic maniacs. These matters were not, he thought, to be regarded purely from the psychical standpoint; unless the anatomical, and especially the chemical, aspects were also considered there would not be much advance.

Dr. PERCY SMITH said that observers in various countries who described paranoia had referred to acute hallucinatory paranoia and chronic hallucinatory paranoia, and included in the writings upon paranoia were almost all the kinds of acute psychosis met with—even acute delirious conditions, which was absurd. It would be too sweeping to assert that in no cases of paranoia were there hallucinations. In the address referred to, he had pointed out that chronic hallucinatory cases, to which the term paranoia was properly applied, often began with a serious emotional disturbance. Many cases of paranoia had hallucinations. He thought psycho-analysis might help in the early stages of the cases described.

Dr. STEEN, in reply, said he was not prepared to explain how a mental conflict produced dissociation, but he had no doubt of the fact, especially when the conflict was strongly repressed. In one of his cases revelation of the source of conflict was followed by three years' relief. He agreed there were hallucinations in some cases of paranoia, but that was a disease characterized by delusions, with, as a rule, absence of hallucinations; certainly the latter were not characteristic of paranoia, while they were in the cases now described. An approach from the psychical side gave a better insight into the condition than the assumption of a causal physical basis. Early psycho-analysis, he believed, would enable many cases to recover.

EARLY DIAGNOSIS OF SYPHILIS.

THE third sessional meeting of the East Riding Division of the British Medical Association was held in the Board Room of the Hull Royal Infirmary on February 5th, with Dr. TURTON in the chair.

Dr. E. HARRISON, in the course of an address on the early diagnosis of syphilis, said that if a sore could be diagnosed within a few days of its appearance there was a very great probability that a course of "914" and mercury extending over six weeks would cure the disease. If, however, two or three weeks were allowed to pass before beginning treatment then one course of injections would probably not suffice, and if postponed until the commencement of the secondary stage much more prolonged treatment was necessary. He held that treatment should not be initiated until a diagnosis had been made. Early treatment following on early diagnosis was of importance to the community at large, as after a few injections the patient was no longer infective. Every sore found on the penis, however trifling in character, should be looked upon as a possible chancre. A genital sore might be syphilis, chancroid, scabies, herpes, or traumatic. The resources for arriving at a diagnosis were (1) the history, (2) the clinical signs, (3) the microscopic findings, (4) the Wassermann reaction, (5) the therapeutic test. The history was not often of much value. The clinical signs, in spite of the existence of modern methods of diagnosis, still remained the most important means of diagnosis. It must be remembered that the existence of a soft sore did not rule out syphilis. From his experience at the clinic Dr. Harrison concluded that, in Hull at any rate, chancroid pure and simple was a rare condition; nearly always there was syphilis at the back of it. He next gave a description of the method of collecting serum for microscopic examination, the manner of examination, and points of distinction between the *S. pallida* and other spironemes. The microscope served to confirm the diagnosis made on clinical grounds; it was of great value in all doubtful cases; and in soft sores it often yielded early positive evidence of syphilis. Until serum for the microscope had been taken no antiseptic should be used locally. The Wassermann reaction was of no value in the early diagnosis of syphilis, as it did not become positive for from two to six weeks after the appearance of the sore. Thus a negative report did not exclude syphilis for six weeks after the manifestation of symptoms.

Dr. TURTON, in thanking Dr. Harrison for his very excellent address, emphasized the uselessness and even danger of trusting to the Wassermann test in early syphilis. It was, however, of great value in the late stage; but even here, when the blood gave a negative reaction, the cerebro-spinal fluid might be positive.

Dr. RITCHIE RODGER said that symptoms sometimes appeared in the throat before the primary sore had disappeared; and sometimes, especially in women, these signs were the first thing to be observed; in such cases the Wassermann test was of some value.

Mr. HOWLETT remarked that the work done by Dr. Harrison at the venereal clinic was of very great value. They had there an argument in favour of State aided as against voluntary hospitals.

Dr. DENYER, Dr. MOIR, Dr. MACKAY, and Dr. LILLEY also spoke, and Dr. HARRISON replied.

DIAGNOSIS OF GONORRHOEA IN THE FEMALE.

AT a meeting of the North of England Obstetrical and Gynaecological Society, held at Liverpool on February 20th, Dr. W. W. KING (Sheffield) read a paper on the diagnosis of gonorrhoea, based upon an analysis of the first 500 cases under his care at the venereal clinic of the Jessop Hospital for Women, Sheffield. He divided the cases into two groups: those in which the gonococcus had been found—"proved" gonorrhoea; and those presenting the signs and symptoms of the disease, but where the specific organism had not been isolated—"clinical" gonorrhoea. The gonococcus was found in 60 per cent. of cases with clinical symptoms of gonorrhoea, but in a number of these was only isolated after repeated examinations. He estimated that from 70 to 80 per cent. of patients with the physical signs mentioned later were really suffering from gonorrhoea. Of the remaining 30 per cent. the majority were undoubtedly venereal, and in one case the infection appeared to be due to a diphtheroid bacillus present in the cervical and urethral discharge.

Clinical Diagnosis.

The symptoms complained of were discharge (yellow or white), pain on micturition, local pain and swelling, abdominal pain, menorrhagia, and irritation. Yellow discharge was present in over 70 per cent. and pain on micturition in about 30 per cent. of both "proved" and "clinical" cases. The physical signs noted were vaginal discharge, vulvitis, papillomata, leucoplakia, lesions of Bartholin's gland, urethral discharge or thickening, urethral caruncles, vaginitis, and affections of the cervix uteri. Vaginal discharge was present in 80 to 90 cent. of all cases. Acute gonococcal vulvitis was not often met with, most of the cases seen at the clinic being in the subacute or chronic stages. In about 80 per cent. of cases there was a purulent urethral discharge, but in a small number the discharge was white in colour and composed of epithelial cells, in which the gonococcus was sometimes found. Thickening of the urethra was most valuable evidence of past gonorrhoea in the female—comparable in this respect to stricture in the male. Infection of Bartholin's gland

was only met with in 10 per cent. of cases. The commonest evidence of cervical infection was purulent or mucopurulent discharge, usually associated with a patulous external os. The combination of purulent discharge and patulous cervix was a most helpful diagnostic sign, especially if the internal os was also sufficiently patent to admit a "dressed" probe into the uterine cavity. In more chronic cases the discharge consisted of a clear mucus, and this coming through a patulous external os, produced a bull's-eye lantern effect, which he had called a "magnifying" cervix. This was typically seen in nulliparae, but occurred also, though less strikingly, in women who had borne children. This condition corresponded to the gleet stage of gonorrhoea in the male, and occurred in about 15 per cent. of cases. The inguinal glands were rarely found enlarged in uncomplicated gonorrhoea. When enlargement was present he always suspected the presence of syphilis. Salpingitis was the most frequent complication of gonorrhoea met with (18 per cent. "proved" cases, 12 per cent. "clinical" cases). No case of gonococcal cystitis was noted in the series, although generally stated to be of fairly frequent occurrence.

Bacteriological Diagnosis.

Detection of the gonococcus in film preparation was at present the only certain method of diagnosis. The method of preparation of these films was important; "dressed" wires were used for collecting the material, which was dabbed—not rubbed—on to the slides. In this way the leucocytes were preserved intact and the intracellular features of the gonococcus more easily observed. The importance of the urethra in the bacteriological diagnosis was shown by the fact that the organism, when found, was present in the urethral discharge in over 70 per cent. of cases. If found at all, the gonococcus was generally detected in the first five examinations, but sometimes not until the eleventh or twelfth. Cultural methods were extremely difficult to carry out with the highly contaminated pus present in the female. Some serum reaction was needed to put the diagnosis of the disease on a surer footing than at present. The technique of the complement fixation test for gonorrhoea was so faulty that the Lister Institute, after examining a dozen or more specimens for him, had finally refused to carry out further tests.

INTUSSUSCEPTION OF THE APPENDIX.

AT a meeting of the Royal Medico-Chirurgical Society of Glasgow, held on February 6th, with the President, Mr. A. E. MAYLARD, in the chair, Mr. ARCHIBALD YOUNG described and showed a specimen removed by operation from a case of ulceration of the ileum, caecum, and ascending colon, with intussusception of the appendix.

The patient, a woman aged 34, had for two years suffered from progressive loss of weight and strength, and from persistent severe pain in the right iliac fossa. The bowels had for long been constipated, but latterly, when they moved, tended to be loose. On examination under an anaesthetic a tumour about the size of a chestnut was made out in the region of the first part of the ascending colon and suspected to be malignant. Laparotomy was performed, and as extensive glandular enlargement was found, the last four inches of ileum, the caecum, and ascending colon were excised. The mucous membrane of this portion of bowel showed extensive ulceration, typically tuberculous, both to the naked eye and on microscopic examination. Ulceration was specially marked in the caecum around the partly intussuscepted appendix. Convalescence was uneventful and the patient left hospital a month later greatly improved in health.

Mr. Young referred to three other cases of intussusception of the appendix, the first two of which he had reported to the society in 1911:

(1) A child, aged 4½, operated on for a suspected partial and recurrent obstruction of the bowel; (2) a woman, aged 24, operated on because of highly acute symptoms suggesting acute appendicitis; (3) a woman, aged 20, operated on in 1917 on account of appendicitis of more chronic type with recurrent attacks extending over several months. The specimen from this case also was shown to the meeting.

In all four cases it was probable that the exciting cause of the intussusception of the appendix was the local irritation exciting excessive peristalsis of the organ.

Dr. W. S. SYME, in a communication on malignant disease of the larynx, pointed out that in this country this disease was much commoner in men than in women, whereas malignant disease of the lower pharynx was commoner in women. Intrinsic disease—that is, affecting the cords, anterior fornix, subglottis, and false cords—might remain as a local condition for a long time, and hence could frequently be treated by thyrotomy and removal of the growth and surrounding tissue. But in extrinsic disease, affecting other portions of the larynx, glandular infection was very common, and the patient was often seen by the surgeon too late for operation. Hence the importance of early diagnosis in cases of persistent hoarseness. Dr. Syme showed a patient whose larynx he had removed two years ago for extrinsic disease. There had been no recurrence and the patient had developed a quite intelligible pharyngeal voice. He reported also three cases of removal of a vocal cord by thyrotomy, one two and a half years and the other three and a half years ago, without recurrence, and a third more recent case.

Dr. ADAM PATRICK described a case of multiple oriental sores (leishmaniasis) infected in Mesopotamia early in 1919 and treated by intravenous injections of antimony. The injections, eleven in all, were given twice weekly, beginning with a dose of 0.04 gram of tartar emetic and increasing to 0.12 gram. The seven ulcers present on hands, legs, etc., had healed satisfactorily.

Dr. W. F. SOMERVILLE described the Bergonié chair—an apparatus for producing a painless alternating interrupted electrical current—and demonstrated its application in treatment.

BACTERIOLOGY OF MILK.

AT a meeting of the Pathological Section of the Liverpool Medical Institution held on February 20th, with the President, Dr. J. F. GEMMELL, in the chair, Dr. R. STENHOUSE WILLIAMS read a note on the bacterial content and keeping qualities of clean milk produced for commercial purposes. He presented the results of work upon methods of milk production carried out by Miss K. Freear and Miss E. Knight at the Research Institute in Dairying at University College, Reading. A series of weekly examinations of clean bottled milk produced for commercial purposes, extending from November, 1916, to December, 1918, demonstrated that the bacterial content of such milk only rose above the 10,000 limit on three occasions, and was only really unsatisfactory in one instance. These results were obtained with milk taken in a special milking shed from washed cows, by clean workers, in steam-sterilized vessels. The cost and upkeep of a special milking shed was an added charge on the price of milk, and further experiments were detailed which demonstrated the possibility of producing clean milk in an ordinary cow byre. From these experiments the following facts emerged: (1) It was possible to produce clean milk in an ordinary cow byre; (2) to ensure success the cows should be clipped and washed, the workers clean, and the utensils steam-sterilized; (3) the covered milk bucket, when properly used, was of great assistance in keeping dirt out of the milk, but, in the hands of unskilled workers, might be an added source of contamination of the milk. This last observation was of special importance to the dairying farmer. Dr. Stenhouse Williams further contributed a paper on the presence of tubercle bacilli in the faeces of apparently healthy cows. He recorded an investigation carried out by himself, in collaboration with Mr. W. A. Hoy, on behalf of the Medical Research Committee. It was shown that about 2 per cent. of apparently healthy cows had been found to be excreting tubercle bacilli in the faeces. Five such cows had been found in four of the fourteen farms in which it had been possible to examine the faeces of nearly all the cows in milk. The results were subject to a considerable margin of error, inasmuch as each cow being examined on a single occasion only, a very small fraction of the daily excreta could be tested; and the method of examination (antiformin) adopted in the earlier stages of the work did not appear to be so satisfactory as the method (Petroff) finally utilized. He showed that the excreta of such cows, when kept in a dark cellar, remained infective for at least twelve months, and, when spread upon pasture land or added to liquid manure, remained infective for at least four months. The possible influence of such material upon the health of other beasts in the farm was pointed out. Both note and paper were copiously illustrated by charts.

MECHANO-THERAPY.

AT a meeting of the London Association of the Medical Women's Federation, on February 17th, the President, Mrs. FLEMMING, M.D., in the chair, Dr. HEDDA ALSTROM read a paper on mechano-therapeutics in general—its past, its present, and its possible future. She traced its history from the most ancient times, showing how, at various periods, it had been held in high esteem; at others it had been looked upon with indifference, until the weight of eminent authority and the pressure of popular opinion had again raised it from oblivion. In many countries medical men and women, high in their profession, specialized in it, and its theory and practice were taught at the universities. Until the same was done in England, the best would not be got out of a good thing.

Dr. BARRIE LAMBERT, C.B.E., spoke on the need for medical personnel in mechano-therapy. She gave an account of the various kinds of gymnastic training given in England, and said that the present-day remedial gymnast was very fully trained and efficient, provided she held the Incorporated Society of Trained Masseuses' triple qualification of massage, remedial exercises, and medical electricity. The better qualified the gymnasts were the more they asked for medical supervision, and few doctors had sufficient knowledge to make progressive work in this line anything but extremely difficult. Most doctors, with the exception of the specialists, might roughly be divided into those who had too little faith and those who had too much. The latter were the more dangerous, as they were apt to order treatment in unsuitable cases. The difficulty of finding medical officers with sufficient knowledge to supervise made the organization of remedial clinics extremely difficult. Dr. Lambert urged the importance of a short course for all medical students in the theory and practice of massage, remedial gymnastics, and medical electricity, and in the after-care of orthopaedic cases.

Dr. A. KELLGREN-CYRIAX spoke of the need for the extended application of mechano-therapy. She said that mechano-therapy rested on a sound physiological basis, and that there was no danger in prescribing and applying it if its laws and technique were understood. It could accomplish much that medicine and surgery could not do —for instance, promoting circulation, developing muscle, removing pus from tissues at a distance from the lesion, re-educating the neuro-muscular circuit, aiding air entry into almost solid pneumonic lung, toning up enteroptosed viscera. Were mechano-therapy practised by some of the profession the public would not be driven to charlatans and bonesetters. The highest forms should be taught at medical schools, and it should take its place beside the great systems of medicine and surgery.

AT a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on February 27th, the President, Dr. E. W. GOODALL, in the chair, Dr. MATTHEW YOUNG read a paper entitled, "An investigation into the periodicity of epidemics of whooping-cough from 1870 to 1910 by means of the periodogram." An investigation of the statistics of London and ten other large towns had afforded evidence of definite periodicity in several cases. In London the maximum amplitude by the periodogram method was in the neighbourhood of two years, and further analysis suggested that there were really two periods involved of approximately 102 and 107 weeks respectively. In Bristol a two-yearly period was not found, the main periods being of 95 and 124 weeks. In Newcastle, Liverpool, and Salford periods of about two years were revealed. The main period at Birmingham was of 99½ weeks, and Glasgow, Edinburgh, and Sheffield all showed maximum at intervals of more than two years. In Dublin the main period was as much as 135 weeks. Manchester, unlike most of the other towns, showed no outstanding amplitude. In Birmingham and Salford the chief periods of measles and whooping-cough were nearly identical, but this did not occur elsewhere. The paper was discussed by Mr. TRACHTENBERG, Dr. BROWNLEE, Dr. MAJOR GREENWOOD, Dr. CHALMERS, Dr. HAMER, and the PRESIDENT.

AT a meeting of the Assurance Medical Society, held on March 3rd, Dr. T. D. LISTER, C.B.E., in his presidential address, said the society stood in a peculiar and isolated position; its members were not representatives of a special branch of medicine, but dealt with many special branches. Their work was not concerned with the technology of any specialty; it was one of applied medicine only. Their function was to advise the great commercial undertakings employing them upon the medical considerations that had to be taken into account in assessing life risks. In their endeavour to hold the medical scales evenly in the assurance market between the public and the office they had to form a judgement on the importance of the medical facts as affected by the other facts, and vice versa.

AT a meeting of the Pathological Section of the Royal Society of Medicine, held on March 2nd, with the President, Dr. WILLIAM BULLOCH, F.R.S., in the chair, Dr. J. A. MURRAY gave a demonstration on the staining and constitution of mitochondria, illustrated by specimens and lantern slides. Dr. E. H. KETTLE demonstrated experimental aspergillosis in the rabbit. Dr. DA FANO gave a summary of the recent work on disseminated sclerosis.

Rebiews.

SYPHILIS IN CHILDHOOD.

IN a handy little volume on *Syphilis in Childhood*, Dr. LEONARD FINDLAY[1] has given a concise and remarkably practical account of the disease, founded on his experience at the Glasgow Hospital for Sick Children. Most of the space is given to symptomatology and treatment. The text is lavishly illustrated, several of the figures being in colour. In the chapter dealing with the mode of infection the author says that the view that stillbirths and miscarriages are evidence of a mother being syphilitic is likely to lead to serious error. In 97 syphilitic families under his care 19 per cent. of 427 pregnancies ended in abortion or stillbirth, and in 19 definitely non-syphilitic families 19 per cent. of 123 pregnancies also ended in a similar way. The high incidence of syphilis in Glasgow, which by clinical and serum tests has been calculated to be 10 per cent., as compared with 2 to 6 per cent. among hospital children in New York, St. Louis, San Francisco, and Chicago, is accounted for by the delicacy of the method used in carrying out the Wassermann reaction, and by the fact that the cases examined came from the poorest neighbourhoods. Dr. Findlay agrees with other writers in emphasizing the low degree of infectivity of congenital syphilis; he has, he says, never seen a case in which infection could be ascribed to association with a syphilitic infant. On the few occasions in which such a method of infection had been suggested by the parents, he invariably found a positive Wassermann reaction on examination of the serum of the father or mother. He admits, however, that though the infectivity is slight and infection rare, it is a danger which should be borne in mind and guarded against.

In discussing prophylaxis, Dr. Findlay maintains that no antivenereal campaign will be successful without notification of the disease, which he feels confident will be adopted sooner or later. He thinks that marriage may be permitted when a negative Wassermann reaction has been obtained after early and thorough treatment with salvarsan and the reaction has remained negative for a year. The antenatal treatment of pregnant women with intravenous injections of salvarsan and mercurial inunction which was carried out in seven cases resulted in the birth of absolutely healthy children, and in no instance did the treatment interfere with the course of gestation. Dr. Findlay regards inunction as the most efficacious method of administering mercury. He has frequently seen children, treated with mercury and chalk without any benefit, immediately improve when inunction with mercury ointment was substituted. In many cases he had continued inunction for about a year without seeing the slightest evidence of toxaemia in the form of stomatitis or proctitis. Salvarsan, which in combination with mercury he regards as practically indispensable in the treatment of syphilis in children, should never, in his opinion, be given to infants

[1] *Syphilis in Childhood.* By Leonard Findlay, M.D., D.Sc., F.R.F.P.S.G. London: H. Frowde, and Hodder and Stoughton. 1919. (Cr. 8vo, pp. xii + 154; 37 figures. 8s. 6d. net.)

by the intramuscular or subcutaneous route, if these can be avoided, as in the majority of cases induration followed by necrosis and sloughing is apt to ensue. He regards the intravenous route as the method of choice; he makes use of the scalp veins, as first recommended by Noeggerath in 1912.

We have noted a few misprints, such as *per utero* (pp. 3 and 7), *olis* for *oris* (p. 84), and Argyl-Robertson (p. 62). Several of the names of lesser known foreign authorities are wrongly spelt (pp. 8, 21, 67, 137). The statement on p. 1 that there is no reputed example of transmission of syphilis even to the third generation requires qualification, and it is not correct to speak of an eruption as a "macula" (p. 35). These, however, are comparatively trivial blemishes in a book which should prove of value to medical practitioners, especially those concerned with child welfare, for whom it is particularly intended.

NEW EDITION OF CUNNINGHAM'S ANATOMY.

THE issue of the first volume of the seventh edition of *Cunningham's Manual of Practical Anatomy*,[2] revised and edited by Professor ARTHUR ROBINSON, marks a definite stage in the evolution of this well known and deservedly popular work. This volume is concerned only with the extremities, and we are told that the change which is being made from two to three volumes has been deemed advisable because of the increase in size caused by the addition of many new figures and the amplification of the dissecting instructions.

We are glad to note that the number of radiographs—a new feature of the sixth edition—has been increased, and their value greatly enhanced by their dispersal throughout the volume. The plates include a fine series of radiographs of young joints displaying the epiphyses, and also a few of injected vessels, to show their relation to bones and some of the anastomosing channels. Another welcome addition is the increase in the space and in the number of figures devoted to the lymphatics. It is well that the attention of the student should be specially directed to the groups of glands that he can readily display for himself, and that, while doing so, he should be given an account of the lymph paths involved, informed of their importance, and warned that they can be studied effectively only by special methods.

The Basle nomenclature has been retained, with many of the old terms still in brackets. Measurements formerly given in inches are now translated into millimetres, but an indiscriminate application of this change to the metric system leads to some curious results which are hardly likely to recommend it—as, for example, on p. 62, where the student is advised to tie the divided axillary vessels and nerves to a piece of wood about 37.5 mm. long!

We are not quite sure of the advantage of using special type for dissecting instructions, which could be sufficiently marked off from the text proper by a special heading. A short experience of the use of the present volume suggests that students may find the particular type employed somewhat tiring—a point worthy of the careful consideration of the editor and publishers of a book so widely used.

We have said before that *Cunningham's Manual* holds a unique place in this country. The new edition bids fair to consolidate that reputation by continuing in its enlarged form the high standard achieved by the original author and maintained in successive editions by the present editor.

WEIR MITCHELL TREATMENT.

THE volume by Dr. DERCUM on *Rest, Suggestion, and Other Therapeutic Measures in Nervous and Mental Diseases*[3] is concerned in the main with the application of the Weir Mitchell method for the treatment of the neuroses and psychoses. Following upon a brief survey on physiological lines of the process of fatigue, the author develops the view that neurasthenia, in so far as it is essentially a fatigue neurosis, must be treated by the simple physiologic measures of rest associated with exercise and feeding. In this section the practitioner will find the fullest possible directions for the treatment of cases along these lines. Minute details as to rest, diet, exercise, medicine, baths, isolation, massage, and electricity are given, and will be found helpful. When, however, the author advocates the routine treatment of hysteria on similar lines it becomes difficult to harmonize his suggestions with current conceptions as to the significance of hysterical manifestations. If neurasthenia be regarded as adequately explained on the basis of morbid physical fatigue, Weir Mitchell methods of treatment for the cure of the disorder are scientifically sound, but in no sense would it seem possible to regard hysteria from a similar pathological standpoint. Hysterical symptoms in soldiers have been treated by active measures directly opposed to those rest methods which tend to fix and perpetuate them. It is interesting to note that Dr. Dercum recently admitted in a paper on "Shell-shock"[4] that he would not adopt the methods he advocates in this volume for war cases, and it is therefore difficult to understand why he does so in respect to civil cases in which the mechanism is essentially the same. When he says that "Electricity also may prove of much value in given cases. . . . The slowly interrupted faradic current is conveniently used to stimulate the muscles. . . . It promotes the general nutrition and increases the general level of the muscular tone," is he not by this treatment unconsciously fixing the idea of illness in the mind of an hysterical patient?

Attention is given along similar lines to hypochondria—which is here regarded as a distinct entity—the drug habit and certain forms of mental disorder. The highly practical details in regard to treatment will be of value to the reader, though they suggest nothing particularly new. In discussing suggestion its use without hypnotism is advocated. In the last chapter consideration is given to shamanism, mesmerism, hypnotism, catharsis, psycho-analysis, metallo-therapy, mind-cure, Christian science and "mystic and religious methods generally." The inclusion of hypnotism and psycho-analysis in this group is sufficient to indicate the attitude of the author to these methods of treatment. Perhaps if he had criticized them with more restraint than is here the case his views would have exerted greater influence.

THE NURSERY SCHOOL.

No one can have a greater claim than Miss MARGARET MACMILLAN to speak with authority of *The Nursery School*,[5] and her book is a noteworthy contribution to the study of a problem which is of importance to every teacher and educational administrator, and concerns everyone who takes heed to the physical or moral welfare of the coming generation. Doctors (and not school doctors alone) are among those on whom this book should have a special claim for consideration.

In a congested urban or slum area the average household provides an atmosphere, physical and psychological, which is far from ideal for the development and unfolding of the child-mind; the function of the nursery school is to remedy this by providing for the "nurture" of the young child. At present nothing is done until the infant school claims the child at five, and Miss Macmillan thinks that this is too early an age for formal instruction, and makes out a strong case for the extension of nursery school training until the child reaches seven.

In the first chapters the author tells of her seven years' experience in Deptford; we learn with what appreciation and gratitude the mothers regard the work; we are shown how the material welfare and cleanliness of the children are cared for; the bathing, the feeding, the clothing, the breathing exercises, the afternoon sleep, are described, and we follow the "toddler" in the successive stages of his nurture until he becomes the seven-year old, differing from his brother of the well-to-do classes, we are told, only in his physical superiority and greater psychological advancement. The garden receives much attention, and Miss Macmillan's experience leads her to make an eloquent plea for open-air nursery schools. The second half of the

[2] *Cunningham's Manual of Practical Anatomy.* Revised and edited by Arthur Robinson. Seventh edition. Vol. I, Superior Extremity; Inferior Extremity. Edinburgh, Glasgow, and London: Henry Frowde, and Hodder and Stoughton. 1919. (Crown 8vo, pp. xxx + 451; 203 figures, many coloured. 12s. 6d. net.)

[3] *Rest, Suggestion, and Other Therapeutic Measures in Nervous and Mental Diseases.* By Francis X. Dercum, A.M., M.D., Ph.D. Second edition. London: Kegan Paul, Trench, Trübner, and Co., Ltd. 1919. (Med. 8vo, pp. ix + 395. 21s. net.)

[4] *Archives of Neurology and Psychiatry*, January, 1919.

[5] *The Nursery School.* By Margaret Macmillan. London: J. M. Dent and Sons. 1919. (Post 8vo, pp. 353; 16 illustrations. 7s. 6d. net.)

volume is chiefly devoted to the important question of the training of the teachers, and here the author's views, though founded on experience and clearly and decidedly expressed, will probably excite a good deal of contention.

This book is not written in the judicial manner of one who plans a textbook or frames a report, but is rather the work of a pioneer who seeks to inspire; its lack of strictly formal arrangement and the author's not infrequent digressions only serve to emphasize its purpose and mission, but it is a little irritating to find in Chapter xxviii nearly half a page of the text (p. 253) repeated, almost word for word, eight pages later.

NOTES ON BOOKS.

BOOKS ABOUT BABIES.

The Baby,[6] by Dr. E. A. SAUNDERS, is a short and thoroughly practical little book on the care of infants, well paragraphed and printed, and very suitable for the study of nurses and mothers on the look-out for a sound elementary handbook dealing with the subject. Every circumstance of the feeding, clothing, airing, housing, and general supervision of the infant seems to have received the author's attention. The book is well written, and deserves success.

The sixteenth edition of *Our Baby*,[7] by Mrs. LANGTON HEWER, provides mothers and nurses with an alternative handbook on the best ways of rearing infants and young children in a rational and scientific manner. The book has been before the public for thirty years, and really requires no other testimonial to its merits; it is full of practical and detailed advice, and undoubtedly deserves the success it has attained.

Mothercraft,[8] a selection of twenty-six lectures on infant care delivered under the auspices of the National Association for the Prevention of Infant Mortality, is a volume for intelligent mothers, nurses, health visitors, members of infant care committees of all sorts, and general readers who wish to be well informed on prenatal and infant hygiene and the care of young children. It is in its third edition, and deals with every aspect of the prevention of infant mortality; the National Association is to be congratulated upon the excellence of these lectures, each written by a well known specialist in its subjects.

Dr. ROBINSON'S book on *Baby Welfare*[9] is based on a series of lectures delivered at the Vincent Square Infants' Hospital, and is designed for the instruction of untrained nurses and mothers. Beginning with a brief account of the infant's anatomy and physiology, the author goes on to the subject of milk and its properties and adaptation to the needs of the child. The second half of the volume is given to the disorders of infancy and their general treatment. Dr. Robinson has succeeded in compressing a good deal of information and sound general advice into the book, which could be studied with advantage by well educated and thoughtful people; perhaps it would be found to try the intelligence of the average laywoman rather high.

The Baby's Food,[10] by Professor ABT, is a collection of recipes for nurses and cooks who have to feed infants and children, based on the author's practice in America and culled from various pediatric manuals. It is intended for the use of mothers and nurses, and, if its directions are followed, should provide their charges with numerous delectable dishes.

The eighteenth edition of *Dr. Chavasse's Advice to a Mother*,[11] edited by Dr. LISTER, presents nurses and lay-women with a great deal of sensible advice about the care and ailments of infants and young children, and some good instruction on the hygiene and general management of older boys and girls. It is provided with an unusually good index, and may be commended to the attention of those who realize their need of a nursery manual.

[6] *The Baby*. By E. A. Saunders, M.A., M.B.Oxon., D.P.H.Oxon. London: Methuen and Co., Ltd. 1917. (Fcap. 8vo, pp. xi + 132; 15 figures. 1s. 3d. net.)

[7] *Our Baby: For Mothers and Nurses*. By Mrs. J. Langton Hewer. Sixteenth edition, revised. Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd.; Toronto: The Macmillan Company of Canada, Ltd. 1918. (Cr. 8vo, pp. 163. 2s. 6d. net.)

[8] *Mothercraft*. Third edition, revised and enlarged. London: National League for Health, Maternity, and Child Welfare. 1919. Cr. 8vo, pp. 324. 5s. net.)

[9] *Baby Welfare: A Guide to its Acquisition and Maintenance*. By W. E. Robinson, M.D. London: T. Fisher Unwin, Ltd. 1918 (Post 8vo, pp. xiv + 206. 7s. 6d. net.)

[10] *The Baby's Food*. Recipes for the Preparation of Food for Infants and Children. By Isaac A. Abt, M.D., North-Western University Medical School. Philadelphia and London: W. B. Saunders Co., Ltd. 1917. (Demy 8vo, pp. 143. 6s. net.)

[11] *Chavasse's Advice to a Mother*. Eighteenth authorized edition, rearranged and rewritten by Thomas David Lister. M.D.Lond. London: J. and A. Churchill. 1920. (Cr. 8vo, pp. 336. 2s. 6d. net.)

ASSOCIATION OF PUBLIC VACCINATORS.

AT the annual meeting of the Association of Public Vaccinators, held recently at Anderton's Hotel, London, when Dr. J. FOSTER PALMER, the President, was in the chair, the attendance was better than at any previous meeting since the war began in 1914. After formal business the financial statement, which was regarded as satisfactory under the circumstances, was adopted. It was stated that the decision of the extraordinary general meeting to increase the subscription had been favourably received by the members.

Dr. C. J. Palmer of Mansfield was, on the motion of Dr. A. E. COPE, unanimously elected president for the ensuing year.

On taking the chair, Dr. PALMER congratulated the Association on having obtained the Order of 1919 raising the minimum fee for vaccination. There still remained much to be accomplished in such matters as fixity of tenure and superannuation and the defence of vaccination. Endeavours in these directions would engage the constant attention of the association. The officers of the year were then re-elected, and three new members of the Council duly elected. Hearty votes of thanks were recorded to the editorial secretary (Dr. Arthur Drury) and the organizing secretary (Mr. Frank A. Briggs).

The Preparation of Calf Lymph.

Dr. H. S. FREMLIN, Assistant Pathologist, National Vaccine Establishment, Hendon, gave an address on the preparation of calf lymph for distribution. He described the difficulties which had been overcome and outlined the methods now in use. Great care was taken in the selection of calves. The animal, which must be perfectly healthy, was on arrival kept in quarantine and well away from those maturing vesicles. The process of vaccination of the calf, the variations in vesicles obtained, and the method of selection and collection of the resulting lymph were described. Experience had enabled the establishment to effect considerable improvements. Each calf was slaughtered after the collection of the lymph pulp and a certificate as to the condition of the carcass was sent to the establishment by the officer in charge. Next came the emulsion process previous to storage. A mixture usually four times the weight of the lymph was used; it consisted of:

Glycerin	...	50 per cent. by weight.
Water	...	50 per cent. by weight.
Clove oil	...	1 per thousand.

After numerous experiments Dr. Blaxhall had found this the most suitable vehicle for the purpose; it acted as a rapid eliminator of extraneous bacteria. The pulp was pounded in a sterile Chalybäus lymph machine and the mixture added, and an apparently homogeneous fluid obtained, to which bacteriological tests were applied. The method of storage was a matter of great importance. The length of time during which the lymph remained active depended greatly on the temperature at which it was kept. In 1898 this was not known, and consequently much of the lymph then circulated was found to produce negative results. This defect had been overcome. Each tube sent out was charged with about 30 mg. of the emulsion. Particulars of all calves were kept in a register, which showed also the lymph with which each calf was vaccinated. Every calf was given a number, as was also the lymph taken from each calf. This number was sent to each public vaccinator. Details were also kept in regard to each lymph, showing to whom it was distributed and the results obtained. During the ten years ending March 31st, 1919, public vaccinators had furnished the establishment with reports on 2,900,000 primary vaccinations with establishment lymph, and these showed a "case" success of 99.4 per cent. and an insertion success of 96.2 per cent.

A discussion followed, and Dr. Fremlin was cordially thanked for his instructive address.

OXFORD MEMORIAL TO SIR WILLIAM OSLER.

OSLER INSTITUTE OF GENERAL PATHOLOGY AND PREVENTIVE MEDICINE.

THE meeting announced to be held in Oxford on March 6th to consider what steps should be taken to perpetuate there in some appropriate manner the memory of Sir William Osler was presided over by the VICE-CHANCELLOR (the President of Trinity College). It was attended by leading members of the University and representatives of the medical profession both in Oxford and London.

The VICE-CHANCELLOR said that the meeting was held to show the respect and affection felt for the late Regius Professor of Medicine, not only by the University of Oxford, but by other universities on more than one continent and by the London hospitals. Osler's name would always be associated not merely with the history of the chair he occupied, but with its actual existence by reason of the generous benefaction, of which the speaker thought he was the first person to hear from Sir William Osler himself. Whether Osler's name would be associated with the future history of the School of Medicine in Oxford would depend upon the result of the meeting.

Sir CLIFFORD ALLBUTT, Regius Professor of Physic in the University of Cambridge and President of the British Medical Association, in proposing a resolution to the effect that the distinguished services of the late Sir William Osler were deserving of a permanent memorial in Oxford, said that it would be impossible to sum up what made the real charm of Osler's character, and he would present only one point of view, which was the universality of his experience and of his sympathies.

Sir HERBERT WARREN, in seconding, said that the most remarkable trait in Sir William Osler's character was the combination in an eminent degree of theory and practice.

Ths following resolution was then proposed by Sir WILLIAM CHURCH, Bt., formerly President of the Royal College of Physicians of London:

> That in view of the intimate association of Sir William Osler's life work with the study of the origin and prevention of disease, the most appropriate form of memorial would be an Osler Institute of General Pathology and Preventive Medicine.

In commending it to the meeting Sir William Church said that it would be fitting that some permanent memorial should exist in Oxford of one who had played so important a part in the life of the university.

Professor ARTHUR THOMSON, who seconded, said that an institution of the kind indicated in the proposal typified Osler's career, for he began life by studying the causes of disease and ended it as an ardent advocate of the means of preventing disease. The one depended on the other, and the proposed institution would typify that intimate and close association.

The resolution was adopted, and, on the motion of the DEAN OF CHRIST CHURCH, seconded by Sir A. E. GARROD, Sir William Osler's successor to the chair of medicine, general and executive committees were appointed to issue an appeal. Professor GUNN, who is acting as interim secretary, said that he had been in communication with friends of Sir William Osler in America, and that a provisional committee had been appointed, consisting of Professors Welch (Baltimore), Harvey Cushing (Boston), Billings (Chicago), President Butler and Dr. Walter James (New York).

Among those who have expressed their sympathy with the proposal are the United States Ambassador, the British Ambassador to the United States, the High Commissioner for Canada, the President of the Royal College of Physicians of London (Sir Norman Moore), the Earl of Crawford, the Earl of Jersey, the Earl of Macclesfield, Viscount Harcourt, Lord Aberdare, Sir Donald MacAlister, Sir George Newman, Sir Walter Fletcher, Lieut.-General Sir John Goodwin, D.G.A.M.S., Sir Robert Hadfield, Sir William MacCormick, and the majority of the heads of houses in Oxford.

Communications may be addressed to Dr. J. A. Gunn, Professor of Pharmacology, The Museum, Oxford.

EIGHTY-EIGHTH ANNUAL MEETING

OF THE

British Medical Association,

CAMBRIDGE, 1920.

WE print below the third of a series of historical and descriptive notes on Cambridge written for the benefit of members and guests attending the Annual Meeting of the British Medical Association to be held in Cambridge from June 29th to July 3rd, under the Presidency of Sir Clifford Allbutt, K.C.B., F.R.S. The first article, sketching the origin of the University and town, and describing the situation and climate of Cambridge, was printed in our issue of January 3rd, 1920, p. 17. The second article, on the development of the University, appeared on January 24th, p. 125. The fourth article will deal with the foundation of the professorships of anatomy and botany; and the history of these subjects, also of chemistry and physics, until the medical school was established on a satisfactory footing. Subsequent articles will be devoted to the medical school of to-day, and to the antiquities and architectural beauties of Cambridge and district.

EVOLUTION OF THE MEDICAL SCHOOL.

The history of the Cambridge Medical School has not yet been written; it is therefore hoped that the following sketch, compiled from many sources, may be found interesting and may prompt some antiquary to write an adequate history of the school.

The materials for construction of the history are scattered in many old records or their modern reprints, as well as in modern books and papers. For the great majority of references to documents from which this sketch has been compiled, we are indebted to the Rev. H. P. Stokes, LL.D., Litt.D., F.S.A., of Corpus Christi College, who by his researches and publications has contributed more than any man living to the history of Cambridge.

The first hint of medical teaching is found in the thirteenth century, apparently between 1270 and 1279, when Nigel de Thornton, doctor of physic, bequeathed property to the university, including some buildings close to the Schools of Divinity and Law. Dr. Stokes suggests that among these buildings would be a medical lecture room.

In early times the University conferred not only the degrees of M.B. and M.D., but also licences to practise surgery or medicine—"C.L." or "M.L."—which of course did not rank as degrees. An arts degree was always insisted on before the M.D. degree, nearly always before the M.B.; it was frequently taken by candidates for the M.L., much less so by candidates for the C.L.

For centuries the teaching consisted only of reading and exposition of theoretical works. The practice of medicine and surgery had to be learned by apprenticeship, and the student saw no hospital practice unless his master was attached to a hospital. Some of the medical students had learned the practice of the art beforehand, and came to the University to learn the theory and get a degree or licence. For a licence a very small knowledge of theory sufficed, the student being passed after oral examination on practical subjects and the production of evidence of practical instruction.

By the Cambridge Statutes of 1396 the student of medicine after graduating in arts, was required to hear *once*, in the schools, the book of Johannicius Philaretus *De Pulsibus*, Theophilus *De Urinis*, the Antidotarium of Nicholaus, with one of the books of Isaac (Israelita), whether *De Urinis*, *De Febribus*, or *De Dietis Particularibus*, or *De Viatico*. He was required also to hear *twice* the works of Galen with their glosses or comments (known only by their Latin translation from the Arabic as the works of Tegnus Galienus[1]), including his book of *Prognostics*, of *Aphorisms*, and *De Regimine*

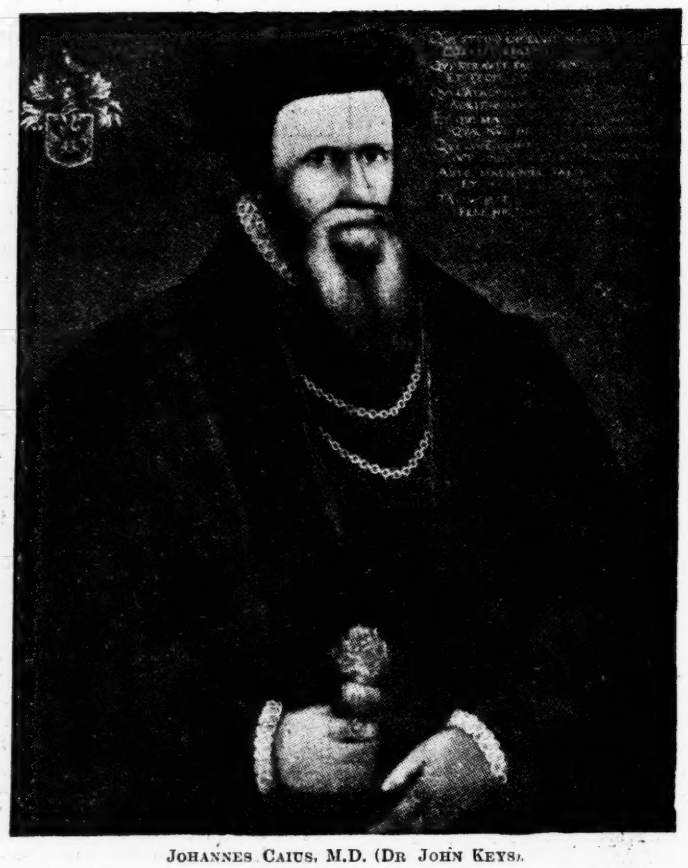
[1] In passing through the Arabic the word τέχνη, the *art* of Galen, got mistaken for a part of his name, and the Latin translation of his works was known as "Liber Tegni Galieni." For further information on the early medical textbooks see lecture by Professor Alexander Macalister in the JOURNAL, October 22nd, 1904, p. 1094.

Acutorum. It was further required that he should read *cursorie*, within not less than three years of his readings in Arts, at least one book on the theory and another on the practice of medicine; that he should both oppose and respond in the schools of his faculty,[1] and should practise at least during one year; he was then admitted to his degree, after the usual deposition and forms.

There is also an additional provision to the same statute, that no one shall be admitted *ad incipiendum in medicina*, unless he had practised medicine at least during two years, a condition apparently inconsistent with that which is contained within the body of the statute, though it is very possible that one might refer to the degree of Bachelor and the other to that of Doctor, or the distinction may be between licences and degrees.[2]

With all these and various other elaborate statutory provisions, the number of graduates and licentiates in early times was very small. This may be attributed to the almost total absence of practical teaching; there is no early record of dissection or of practical pharmacy with its adjuncts—botany and (in those days) alchemy. The town was not large enough to provide work for many apprentices, and there was no public hospital. The Hospital of St. John was a home for the aged and infirm rather than a sick-house, and the Sturbridge Hospital was only for lepers, and therefore these institutions could provide only a limited field of study. The sick poor were treated in the several parish workhouses. But towards the end of the reign of Henry VIII there is a sudden increase in the numbers of licences and degrees conferred. This is possibly indirect evidence of the introduction of practical anatomy and other sciences.

In those days dissection, if done at all, must have been done secretly owing to popular prejudice; therefore it is no evidence, *pro* or *contra*, that there is no mention of it in the statutes of the University or the Colleges. But more enlightened times were approaching. In 1546 the King founded the Regius Professorship of Physic; and among the items proposed[3] for the consideration of a Royal Commission in 1548, one was "To constitute a Medical College in some other fit place in the University" (after the foundation of a College of Civil Law) "by assigning one of the colleges for the study of medicine, and to make such of the fellows thereof as were willing to apply to that study and should be deemed fit, Fellows of the King's Medical College, and to transfer to other colleges those who were unwilling or should be considered unfit to follow that art, or to assign pensions to the Master or Fellows of such college."[3]



JOHANNES CAIUS, M.D. (DR JOHN KEYS).
(Reproduced from the portrait in Dr. Venn's biography, after the painting in Gonville and Caius College, by permission of the Master and Fellows.)

This scheme was not carried out; but the deficiency was met by the generosity of one of the great benefactors of English medical science, of whose life it is necessary to give an outline, for the better explanation of his work, influence, and bounty. John Keys, a native of Norwich, entered Gonville Hall in 1529, at the age of 19. There he latinized his name as Johannes Caius,[4] graduated B.A. 1533, M.A. 1535, was elected Fellow in 1533. After studying classics and probably medicine in Cambridge, and becoming a very proficient Greek scholar, he went to Padua in 1539, and graduated there as M.D. in 1541. In 1543 he left Padua, visited Florence, Pisa, and other Italian towns, returning to England in 1544 or 1545. He was admitted Fellow of the College of Physicians in 1547, and practised in London for some years. Then in 1558 he refounded Gonville Hall under the name of Gonville and Caius College, making special provision for the pursuit of medicine by its students.

His reputation as a physician was great, but it is difficult to suppose that in the eleven years of his practice in London he made money enough to endow a college. Moreover, from 1529 to 1547, eighteen years, he was pursuing his education; and though he was receiving some payment as a scholar, and later as a Fellow, of what he calls "that pore howse" Gonville Hall, it seems improbable that this was sufficient to pay for his foreign travels and the books and manuscripts he bought. It is justifiable therefore to suppose that he inherited considerable property. His entrance to the university at the age of 19, four or five years above the usual age at that time, rather looks as if he had previously spent a few years assisting his father in some kind of business, from the profits of which he afterwards derived an income.

As a student at Padua he lodged in the same house with André Vesale (or Vesalius), with whom or from whom he acquired an enthusiasm for anatomy, though it is not certain that he fully accepted the Vesalian innovations in the science. During his residence in London, and even before entering on medical practice, he gave lectures with practical demonstrations on anatomy at the hall of the Barber-Surgeons, who had a licence, by their original charter of 1540, to claim the bodies of four criminals annually for purposes of dissection.

In refounding his college he provided that two of the three new fellowships should be held by medical men. He also made elaborate arrangements for the study of anatomy, obtaining from Queen Elizabeth in 1564 a formal grant of bodies for dissection, to the effect that "they and their successors shall have for ever, at their free discretion and will, without the contradiction of anyone, two human

[1] This refers to the method of examination by questions and disputations in public. The term *opposal*, for a difficult question, was corrupted into *puzzle*. See Skeat's dictionary. *Cursorie legere*, Dr. Stokes informs us, was to read aloud in the schools the text of an author, with the customary glosses, but without comments of the reader's own.

[2] George Peacock, *On the Statutes of the University of Cambridge*. Appendix A, p. lii, footnote, in which other information on textbooks, etc., will be found.

[3] Cooper's *Annals of Cambridge*.

[4] His name occurs in ten different forms in the bursars' accounts of Gonville Hall; all the forms end with the sound of *s*. His college is always known as "Keys College," and the old spellings indicate that he was usually called Keys, in spite of his latinized name. But as the departure of English vowel sounds from the Continental type was not so complete in the sixteenth century as now, the names Keys and Caius were more nearly alike in his time. *Key* and *quay* were then pronounced *kay*; now both have degenerated into *kee*.

bodies for anatomy, condemned by law for theft or homicide, and dying in the town, castle, or county of Cambridge. And that they may freely dissect them at their will, with the reverence due to the human body, for the increase of medical knowledge; and this without any payment" (*Treasury*). He gave careful directions in his Statutes concerning these dissections, desiring that "every year, during the winter, there shall be spent by the students of our College, on anatomy and on the worthy burial of the dissected bodies at St. Michael's, 26s. 8d. The president and every one residing in college to attend the burial of the remains with as much respect and ceremony as if it were the body of some more dignified person; and this on account of the advantage they have thus received. And the master shall see that the students of medicine do not treat the body with any lack of respect or humanity.

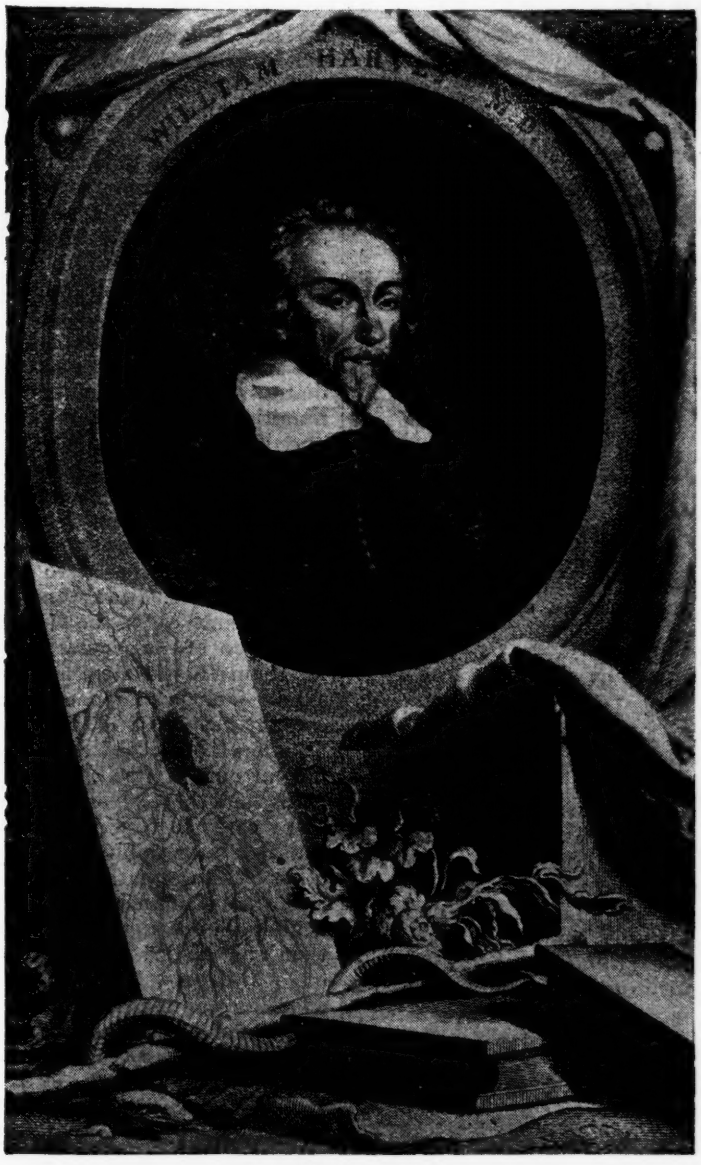
Dr. Venn, from whose biography of Caius the above translation of the Latin statute is taken, expresses a fear that very inadequate use was made of this privilege. We take this opportunity to thank Dr. Venn for his courtesy in allowing us to make free use of his work in this outline of the life of Caius, and in particular for his permission to copy the portrait here presented. The biography will be found in the volume of the works of Caius, edited by John Venn, Sc.D., F.R.S., F.S.A., published by the Cambridge University Press.

Caius was admitted to the degree of M.D. at Cambridge, by incorporation from Padua, a few days after the opening of his new college. The master of the college dying a few months later, Caius was pressed by the Fellows and by other representative persons in Cambridge to undertake the mastership. He yielded unwillingly, refusing to accept a stipend or any other emoluments. He was master from January, 1558–9 until his death in 1573. His medical practice necessitated his spending much time away from Cambridge; but he did his duty conscientiously to the college, and continued to spend money upon it in building and in other ways.

His noble benefaction did not make as great an impression on the study of medicine as it deserved. It was a very long time before any thorough medical training was attempted. Students still sought their medical education at Padua, Montpellier, and other foreign universities, and, after graduating there in arts and medicine, were admitted to the Cambridge M.D. "by incorporation." But be it noted that in these cases Cambridge always insisted on graduation in arts, either at home or abroad. These incorporated doctors swell the list of graduates of Cambridge without adding much to her credit.

The first important result of the work of Caius was the attraction to his college of Harvey, who was followed about twenty years later by Glisson. William Harvey graduated B.A. in 1597, and in the following year proceeded to Padua in search of the best medical education then obtainable. After graduating there as M.D. in 1602 he returned to England, was admitted to the degree of M.D. at Cambridge, and elected Fellow of the College of Physicians. Cambridge can only claim to have laid the foundation of his education. His interest in the circulation of the blood was awakened at Padua, and his researches on this and other subjects were carried on in his private laboratory in London.

But Glisson seems to have completed his education in England. He practised in Cambridge, and was Regius Professor of Physic from 1636 to 1677. Physic in those days included most of the subjects of medical study, and Glisson therefore taught, among other things, anatomy and the limited physiology of his day. So we find that by a Grace of the Cambridge Senate in 1646 the attendance at three dissections required by the University statutes (capp. 15, 17) as a qualification for M.D., and the attendance at two required from candidates for M.B., were revived, this exercise having fallen into disuse since the death of Caius.



WILLIAM HARVEY, M.D
(From Houbraken's engraving of the portrait by Bemmel.)

During Glisson's professorship a great impetus was given to botany in Cambridge, and in England generally, by the work of John Ray, who was first a student of St. Catharine's Hall, then migrated to Trinity College, of which he became Fellow in 1649. He died in 1705.

Chemistry also became a popular study at Cambridge in the seventeenth century, but there is no record of lectures in the subject until, in the last twenty years of the century, it was successfully taught by a Veronese, John Francis Vigani. In 1702–3 his services were acknowledged by the University investing him with the title of Professor of Chemistry. Bentley, Master of Trinity College, soon after fitted up for him a laboratory in the "lumber hole" eastward of Trinity Bowling Green.

Then experimental physics and physiology received an important impulse from the work of Stephen Hales, who became Fellow of Corpus Christi College (or Benet Hall) in 1703, and F.R.S. in 1718. He carried out remarkable experiments in his private "elaboratory" in the College, also at Vigani's laboratory in Trinity College, and later during many years at his home at Teddington, of which parish he was incumbent. In later life he was admitted D.D. of Oxford. His chief publications were entitled: *Statical Experiments on the Sap in Vegetables, and an Attempt to Analyse the Air*, 1727, being vol. i of his Statical Essays; *Hydraulick and Hydrostatical Experiments on the Blood and Blood-vessels*; also the *Nature of Certain Concretions*, 1733, being vol. ii.

British Medical Journal.

SATURDAY, MARCH 13TH, 1920.

ORGANIZATION OF IN-PATIENT TREATMENT.

THE future of hospitals and the need for extension of accommodation and the better organization of that already provided is very much before the public at present, and Lord Knutsford, with his happy knack of getting to the centre of the stage, has had a good "press" for his announcement that it is intended in future to ask in-patients at the London Hospital to contribute 10s. a week towards the cost of maintenance. Many correspondents, he announces, have asked him to set aside some of the wards for paying patients and make an adequate charge, but he declares this impossible, because all the thousand beds at the London Hospital are sorely needed by persons who could not pay even the moderate charges of a pay ward. But with that other knack of his, perhaps not quite so happy, which reminds us of the machine in the tube railways to keep the London Hospital going for one second, he has promptly produced a scheme for a paying hospital where there would be a "menu" of operations at inclusive charges done by a resident surgeon paid £1,000 a year. Lord Knutsford, in disclaiming any originality for this idea, assigns it to Mr. Danvers Power, but it is fairly old, and many attempts have been made to carry it out. The home for paying patients at St. Thomas's Hospital has been in existence for many years, and has done much useful work. The Home Hospitals Association also must not be forgotten, although the provision it makes is on a relatively small scale. A few weeks ago[1] we were able to give a description of St. Chad's Hospital at Birmingham, where a building was specially erected for the purpose, and the plan has been tested for five years. There 90 per cent. of the patients pay an inclusive weekly fee for accommodation, nursing, and all professional attendance. The difficulty created by the need for considerable capital expenditure to erect the buildings has been got over there, and could, we have no doubt, be got over elsewhere if the right people went about it in the right way. The need is undoubtedly great, but we hardly think that Lord Knutsford's plan of a £1,000 a year resident surgeon is going to meet the requirements of the public, even with the proviso that anyone requiring an operation outside the resident surgeon's skill should call in a specialist.

The British Medical Association, in its pamphlet on a Ministry of Health published a couple of years ago,[2] recognized the need for the full provision of consultative, specialist, or institutional services, and went on to point out that "the maintenance or establishment of the true relation between the patient and his chosen practitioner is essential to the best utilization of such additional services, and their proper development would encourage many general practitioners, as is very desirable, in the continued cultivation of skill in some branch of advanced or specialized work or knowledge." Lord Dawson of Penn, in an address he gave at Birmingham a few weeks ago, said that hospitals must be more widely distributed and must be graded, a distinction being made between the primary institution, where a patient would be looked after by his own doctor, and the larger hospital to which he could be sent to be under the care of a staff of specialists when necessary. He asserted further that the present hospitals are not only insufficient in number, but are not performing the right functions, by which we understand him to mean that many of the large general hospitals are cumbered by cases which either from the first, or at the stage they have reached, could be as efficiently or more efficiently treated in less elaborate and expensive institutions. This belief, we think, is very widely entertained, perhaps more generally in the large provincial towns than in London. Lord Dawson referred to the importance from an economic standpoint of minor cases of injury or disease disabling for a time, but not dangerous to life nor calling for elaborate hospital treatment. It is obviously to the interests not only of the individual but of the community that the period of disability should not be lengthened owing to any want of skilled treatment; this was well exemplified during the war by the excellent results that followed immediate treatment of minor injuries to the eye in munition factories; the period of disability was reduced from weeks to days, with, obviously, a great diminution in the risk of serious complications.

There is another direction, however, in which the general hospitals might be relieved; it was well illustrated by the paper on "The Care of Crippled Children" contributed to our pages by Sir Robert Jones and Mr. Girdlestone last October. The treatment in such cases, the authors pointed out, is beyond the scope of the general hospitals, for it is impossible for them to provide the necessary conditions, which should include ample bed accommodation in open-air country hospitals. It is, they went on to say, characteristic of orthopaedic surgery that operation is often not an aim in itself, but one link in a chain of treatment, and that by early treatment operation may in many cases be avoided altogether. Somewhat similar considerations apply to a very considerable number of other classes of patients, including even many who, at the time of admission to the general hospital, are acutely ill, needing special treatment—perhaps operation and skilled nursing. The crisis passed, they ought to give place to other serious or acute cases awaiting admission. It has therefore been proposed in several cities that the central general hospital should be linked with another institution in the outskirts of the town adequately equipped for after-treatment, and near enough to render it possible for the physician or surgeon who saw the patient through the acute stage to follow up and maintain continuity of treatment. The war has at least taught us that patients can be transported in properly appointed ambulances without immediate risk on the journey and with great eventual benefit to themselves by being nursed to recovery in more tranquil surroundings. We showed a fortnight ago that a scheme of this kind had made considerable progress at Cardiff, where the general hospital in the centre of the town has already been overbuilt on the site, and where an estate of five-and-twenty acres a few miles away has been acquired. As we have said, similar schemes, particulars of which we are not at liberty to give, are in contemplation, and we hope that this method of contributing to the solution of the hospital question will receive the full consideration it deserves.

[1] February 21st, p. 263.
[2] London: The British Medical Association, pp. 16, 3d.

PYREXIA OF UNCERTAIN ORIGIN AND ENTERIC FEVER.

THE Great War provided a rigorous test of the accuracy of bacteriological methods in their relation to the prevention, diagnosis, and to a lesser extent to the specific treatment, of infections of military importance. The remarkable success with which typhoid and paratyphoid fevers were prevented in the British army is generally admitted to be the most brilliant of the many medical achievements of the war. But in order that a due perspective may be maintained it is important to realize the gaps that still exist in our knowledge, and among the dark patches upon which light is greatly to be desired few are more important than the group of cases included under the label "P.U.O."

When attempting to ascertain the precise nature of the infection in a case of pyrexia of cryptic origin, no method is more satisfactory than the actual isolation and identification of the infective micro-organism from the blood, tissues, or excreta of the patient. Should these investigations fail, serology can sometimes be of material help, and in the case of fevers of the enteric group the presence in the blood serum of the patient of specific agglutinins for the typhoid bacillus or for those of paratyphoid A or B, the relative abundance of such agglutinin or agglutinins, and the fluctuation shown by them as time goes on, are points that have been insisted on by Professor Dreyer and others as of the utmost value in effecting a correct diagnosis.

In a recent report to the Medical Research Committee[1] Dr. W. W. C. Topley, Dr. S. G. Plates, and Dr. C. G. Imrie describe the result of their investigation of cases of pyrexia of uncertain origin invalided from the Western front between October, 1916, and January, 1919. The majority of the cases examined were under treatment in the wards of Charing Cross Hospital, but some were in the Ontario Military Hospital at Orpington, others in the Italian Hospital, and others in the Military Heart Hospital at Hampstead. The chief question investigated was the proportion, if any, of these cases actually suffering from enteric infection. Since bacteriological examination of the stools of 327 patients only yielded positive results with regard to bacteria of the enteric group in two cases, the investigation became perforce entirely serological, and it may be said that the elaborate care with which Dr. Topley and his colleagues set themselves to exclude errors in the diagnosis of enteric fever from the agglutinin index is worthy of all praise.

A study was made of the accuracy of the agglutination test when carried out according to Dreyer's technique, with special reference to the "reduction factor" and the "agglutinin unit" introduced by him for the purpose of obtaining accurate, uniform, and comparable records. Repeated estimations were made of the agglutinin titre of a large number of serums by this procedure, and the percentage of error determined. The agglutinability of standard cultures was compared against various serums with a view to ascertaining the accuracy of the reduction factor, and as a result of these observations the conclusion was reached that the complexity of the various strains in this group is too great to permit of constant quantitative results by this method. For that reason chiefly, but also because they are by no means persuaded that agglutinins are independent of certain other antibodies present in serum, Dr. Topley and his colleagues prefer to record their results in terms of the dilution of serum which will produce a given result, rather than as agglutinin units.

An obvious source of error in an inquiry of this kind arises from the presence of "residual" agglutinin in the patient's serum, present as the result of previous inoculation with T.A.B. vaccine. It has been maintained by Dreyer and others that errors from this source can be excluded by making repeated observations and watching the fluctuation in the curve of agglutinin to the typhoid bacillus and to paratyphoid A and B respectively; the curve rising in the case of the particular organism infecting the patient, and subsequently falling. This matter accordingly was investigated, the effect of time and also of reinoculation being determined on the three agglutinins.

Having in this way prepared the ground and eliminated sources of error as far as possible, Dr. Topley and his colleagues made repeated examinations, usually at intervals of a week, of the serum of altogether 502 patients. The results obtained are fully recorded in tables attached to the report. A variation of 200 per cent. on the lowest reading was observed in 35 cases. After wisely considering all the other evidence available as well as the serological results, they conclude that out of 211 cases of atypical and undiagnosed pyrexia from the Western front examined by them agglutination tests pointed definitely to enteric infection in 10 cases, and more doubtfully to the same disease in 4 others. It would seem therefore that between 5 and 7 per cent. of the cases invalided from the Western front during the two and a half years in question with undiagnosed pyrexial illness were suffering from one or other of the enteric fevers. This proportion will strike most people as small; the etiology of P.U.O. has still to be adequately defined.

[1] Medical Research Committee. Special Report Series, No. 48. A Report on the Probable Proportion of Enteric Infections among Undiagnosed Febrile Cases invalided from the Western Front since October, 1916. H.M. Stationery Office. 1920. Pp. 88. Price 3s.

TUMOURS COMPLICATING PREGNANCY.

DR. HERBERT SPENCER'S Lettsomian lectures on tumours complicating pregnancy, labour, and the puerperium, the publication of which was concluded last week, form a characteristically valuable contribution to obstetrical and gynaecological literature, and one which, although dealing with rare conditions, should command the attention of practitioner and specialist alike. In them the profession is given the benefit of a considered statement of views that have ripened slowly in the light of a long and very full experience, and they possess all the soundness which such circumstances, combined with clear thinking, might be expected to bestow. His careful records and his habit of taking tracings of the size and situation of abdomino-pelvic tumours enabled him to present many illustrative cases in demonstrative detail. Indeed, this accuracy of record and the lengthy period over which his observations have extended in individual cases, are amongst the most valuable features of his review of the subject.

Fibroids are no rare complication of pregnancy and labour. Dr. Spencer estimates their frequency at one in a hundred and fifty cases, but in many their presence is entirely overlooked. With the exception of submucous tumours they do not, in his experience, tend particularly to produce abortion, although premature — and also, curiously enough, post-mature—labour is not uncommon. Labour in a uterus with fibroids is often surprisingly simple and easy, and the main warning to be remembered is the danger of attempting to drag a child past an obstructing tumour by forceps or after version. Where operation is necessary Caesarean

section at term, followed by hysterectomy, is generally the most advisable treatment. Incidentally it may be noted that Dr. Spencer lends the weight of his opinion to the view that fibroids are not so much a cause of sterility as is sterility a cause of fibroids.

Ovarian tumours, which formed the subject of the second lecture, are found to lead to abortion in 25 per cent. of the cases in which they complicate pregnancy. Dr. Spencer emphasized the value of pushing up the cyst out of the pelvis at the beginning of labour, and, once more, the risk of attempting forcible delivery past the tumour. Where laparotomy is necessary, complete dilatation of the cervix should first be secured, so that the child may be extracted with forceps while the ovariotomy is being finished and the patient is still under an anaesthetic. He pointed out also what has not previously emerged so clearly—namely, that the risk to the child is increased by operating during pregnancy, and that therefore operation should, if possible, be postponed until the child is at least viable.

The third lecture dealt with cancer of the cervix complicating pregnancy, labour, and the puerperium. The lecturer is dubious as to the part played either by lacerations or "erosions" of the cervix as etiological factors, and hazards the opinion that local venereal infection may prove to be a more adequate explanation of the fact that this condition is so predominantly an affection of parous rather than of nulliparous women. He related six cases of advanced pregnancy complicated by cancer of the cervix, which he had treated by high amputation of the cervix by the actual cautery with the extraordinarily proud result that three of the patients are alive and well after nineteen, twenty-two, and twenty-five years respectively. Unquestionably these results must give us reason to pause and think. The hopes based on the technique of Professor Wertheim, whose recent death the Vienna school is now mourning, have not been fulfilled, and throughout all gynaecological literature there is apparent a feeling almost of despair as to the powers of surgery in dealing with this particular form of cancer. Many gynaecologists have found in radium, either alone or in combination with hysterectomy—and here the lecturer's emphasis on the actual cautery as the instrument of amputation is to be noted—new promise of success. Recent reports from America contain a note of fresh and confident hope in regard to it. As yet, however, little systematized work on the problem has been done in this country, and it seems more than time that it should be undertaken. More and yet more radium should be obtained and made available at different large centres, where research on a definite plan could be instituted under the combined direction of competent physicists, pathologists, and operating gynaecologists and surgeons. Each of these points is essential, for not from more or less desultory work, controlled solely by the clinician or by the radiologist, can results be expected that will enable rapid and sure progress to be made. The matter is, indeed, a form of national debt, towards the extinction of which some of our wealthy philanthropists might well devote their attention and their means.

THE OXFORD MEMORIAL TO SIR WILLIAM OSLER.

THE meeting held last Saturday in the University Museum, Oxford, under the chairmanship of the Vice-Chancellor, arrived at the appropriate decision that his memory should there be commemorated by the establishment of an Osler Institute of General Pathology and Preventive Medicine. Professor Arthur Thomson justly said (p. 369) that an institute of this kind would typify Osler's life, beginning with the study of the causes of disease and winding up with increasing interest in prevention. Eloquent and sympathetic tributes were paid to the wide influence for good which Osler wielded—his unceasing and successful efforts to promote international amity, especially between America and this country, the wide range of his scientific and literary interests and attainments, his high ideals of the status and education of the medical profession, the unswerving optimism with which he looked back on the past and forward to the future, and, not least, the extraordinary charm and fascination of his own character, which laid under the spell of enduring friendship all those who were privileged to know him. It was unanimously felt that Osler was one of the "great men who mellow the whole age in which they live," and that it was just and salutary to do something, and something worthy, to carry down to future generations the fragrance of his memory and the brilliance of his achievements. To carry out the project a large sum of money will be required, but Oxford is in need of such an institute, and we do not doubt that the suggestion will thus make a double appeal—on the one hand to the multitude of friends that Osler gathered round him, and on the other to graduates of the university in all faculties. On the first head we are glad to learn that already some of the leaders of science and learning in the United States are forming a committee, and that a similar committee will shortly be established in Canada, where Osler began his career as a teacher of physiology, pathology, and clinical medicine. Oxford and its graduates all over the world are proud to have gained for their university the enthusiastic loyalty of one who had already earned his reputation as a great physician in Canada and the United States of America. The presence of the Vice-Chancellor in the chair and of many of the heads of colleges and other leading members of the university at the meeting last Saturday is evidence of this, and there are many other such evidences. The form the memorial is to take would have appealed to Osler himself; it will further the progress of two of his greatest interests in life. The building to be erected will in the first instance accommodate the University department of pathology, which is in need of expansion both for teaching and research. It is proposed that the present pathological laboratory shall be given over to pharmacology, now inadequately housed in temporary premises.

RARITY.

A VERY striking and rare condition is naturally prone to be reported relatively more often than a lesion of everyday occurrence. Accordingly confusion of at least two kinds may result: as the existence of such a condition is common knowledge, it is sometimes regarded as of common occurrence. On the other hand, a rare disease may come under the notice of several observers whose separate reports may go down to medical posterity as those of two or more distinct cases; thus a case of progressive myositis ossificans originally described by Dr. F. W. Burton-Fanning, subsequently visited most of the large London and some of the provincial hospitals, and accounts of this "brittle man" were published in two other medical papers and, it may be added, in the *Daily Mail* also. A case of hypernephroma with hirsuties, one of the earliest reported, in a girl aged 3 years, appears separately under the names of J. W. Ogle, W. H. Dickinson, and sometimes of H. Pitman, and so is apt to be counted twice or even thrice. References, too, have a knack of going wrong, and as a remarkable example of duplication in this way, Plass's[1] observation on the case of congenital obliteration of the oesophagus reported by C. K. Bowes

[1] E. D. Plass, *The Johns Hopkins Hospital Reports*, Baltimore, 1919, xviii, 259–286.

may be quoted. The title reads "By C. K. Bowes, Oxon.," and the Germans especially have taken the "Oxon." as the last name of the author, and by further corrupting it to "Axon" have created a place for it in their literature, so that frequent references are made to two cases, Bowes's and Axon's! In reporting a case of congenital atresia of the oesophagus associated with fused kidney, Plass has consulted and verified the references to 136 cases. The lesion consists of a cul-de-sac, representing the upper part of the oesophagus, and projecting from 1 to 5 cm. or more below the level of the larynx, while the lower part of the oesophagus is in communication below with the stomach and above with the trachea, just above the bifurcation. These two portions may or may not be connected by a thin strand of tissue; in 51 cases such a connexion was present, in 41 it was absent, and in 44 no note was made about its presence. Other anomalies are commonly present, the most frequent being atresia ani; among 94 cases in which the point was mentioned, 59 presented some anomaly, and atresia ani was present in 24. The developmental error occurs at a very early stage, and has been observed in a fetus 18 mm. long. The incidence in the sexes is equal, and the infant had usually been born at full term. The symptoms are asphyxiation due to nasal or pharyngeal mucus, choking attacks, prompt regurgitation of food, inflation of stomach with each respiration, breath sounds more audible than normal over the abdomen, and cyanosis which may be either constant or periodic; the urine, though passed as usual, becomes reduced to an extremely small amount after a few days. There is wasting, often accompanied by inanition fever, and life is never prolonged more than fourteen days. Gastrostomy in 16 cases and jejunostomy in one case have been unsuccessful, and the only hope of rational therapy lies in advances in intrathoracic surgery.

ETIOLOGY OF YELLOW FEVER.

IN previous reports noted here Noguchi has shown that yellow fever patients in Guayaquil have a filterable organism, *Leptospira icteroides*, in their blood; that after recovery from an attack their blood serum agglutinates and dissolves this organism when introduced into the peritoneal cavity of a normal guinea-pig; and that the organism produces in some experimental animals the characteristic symptoms and lesions of yellow fever in man. For these and other reasons, the probability that *Leptospira icteroides* stands in causal relation to the yellow fever of Guayaquil is great. In his tenth paper Noguchi[1] records immunological experiments undertaken with the view of deciding the relation between *Leptospira icteroides* and *Leptospira icterohaemorrhagiae*, the causal organism of spirochaetosis icterohaemorrhagica. The serums of animals immunized against single and also against several strains of these two organisms respectively showed a high titre of neutralizing power for cultures of the homologous groups; but the action of the serums was not absolutely specific, for injection of a sufficient amount of the anti-icteroid serum apparently prevented a fatal outcome in a guinea-pig inoculated with multiple minimum lethal doses of a culture of *Leptospira haemorrhagiae* and *vice versa*. More or less (though not absolute) specificity was shown also by the complement fixation reaction. On the other hand, guinea-pigs infected with *L. icteroides* may after recovery resist a subsequent inoculation with a virulent strain of *L. icterohaemorrhagiae*. It appears, then, that these two organisms, though closely allied, are distinct in their immunological reactions, the difference perhaps amounting to that between subspecies or races. Their pathogenic action also is somewhat different, inasmuch as *L. icteroides* produces chiefly jaundice and nephritis, and *L. icterohaemorrhagiae* haemorrhage and nephritis. In a further paper[2] Noguchi states that a multivalent anti-icteroid serum of high potency when given to guinea-pigs infected with *Leptospira icteroides* checked the progress of the disease; when administered intraperitoneally during the period of incubation it completely prevented its development, although subsequent examination of the guinea-pig when killed after recovery showed haemorrhagic lesions in the lungs; when given early in the course of the disease the fatal outcome was prevented, but when administered several days after the onset of jaundice and nephritis, the serum did not exert any beneficial effect; it appears probable that the serum would fail also in human yellow fever when the stage of multiple haemorrhages, cholaemia, and uraemia has been reached. In a clinical report on about 70 cases of yellow fever at Guayaquil by another member of the Rockefeller Commission—C. A. Elliott[3]—it is pointed out that although the mosquito has been regarded as the chief, if not the only, means of transmission of the disease, other means, such as direct transdermic infection, seem possible, in view of the apparent similarity between yellow fever and spirochaetosis icterohaemorrhagica. That many patients go habitually bare-footed; and that Noguchi produced the disease in experimental animals by inoculations through the unbroken skin, would seem to support this hypothesis.

[1] H. Noguchi, *Journ. Exper. Med.*, 1920, xxxi. pp. 135-158.

[2] Ibid., pp. 159-168.

[3] C. A. Elliott, *Arch. Int. Med.*, Chicago, 1920, xxv. 174.

THE PHYSIOLOGICAL ACTION OF INTRAVENOUS INJECTIONS.

IN a recent number of *Le Monde Médical* (No. 560, p. 327) Dr. Laumonier discusses the effects of intravenous injections in general. The first and most salient feature is that the results, from a reactional point of view, are much the same whatever be the substance injected, whether of animal or vegetable or even of mineral origin—namely, shivering and a rise of temperature coinciding with more or less intense leucocytosis followed by a sweating stage, a fall of temperature, and copious diuresis. These symptoms are the same whether the vein be injected with an isotonic solution of sugar or with a metal in a state of fine division—for example, in a colloid state, with serum or plasma, with emulsions of living or dead bacilli, or with red corpuscles—and the therapeutical results, as manifested by an improvement of the patient's state, are similar. We are at liberty to infer that the reaction is not special to the substance injected, but is a protest on the part of the organism against the sudden introduction into the circulation of a heterogeneous something. Now the very fact that the organism reacts and resents the foreign invasion shows that it is in good posture for combating the septic or other pathogenic germ that has gained a footing in the tissues, and by furbishing up its defences against the one it enhances its defensive powers towards the other. The more pronounced the reaction after intravenous injections of the colloid metals, for instance, the more hopeful the prognosis. This being so, it may be argued that the reaction merely demonstrates the integrity of the means of organic defence without our having exerted any influence in creating or maintaining the latter. More or less intense leucocytosis, corresponding to an increase of white corpuscles from 5,000 or 7,000 to 25,000, is the constant and no doubt the efficacious consequence of the intravenous injection. There is no uniformity in this respect, and the substance which proves most leucogenous in one case may be less so in another, so that when a first injection fails to determine the desired reaction the substitution of some other substance may be attended by more satisfactory results. The fact that the therapeutical results are consequent upon reactions common to all intravenous injections proves pretty clearly that the reaction is not in any sense specific, and this may explain why various substances have been recommended in the

treatment of a particular disease, and why one substance can be employed for all kinds of infection irrespective of their nature.

TREATMENT OF PERITONITIS.

IN a recent paper[1] Crile has outlined the treatment of peritoneal infection as carried out in his clinic. He believes that the general symptoms of peritonitis (rapid pulse and respiration, raised blood pressure, and heightened temperature) are due to blood acidosis. The local symptoms (pain, rigidity, etc.) are the sign of the effort of the organism to prevent the spread of infection by securing immobility. Crile is as insistent a believer as ever in his anoci-association theory, and adheres to his old technique. The war has amply proved the almost unassailable brief that he holds for gas and oxygen anaesthesia. He has fought a good fight on this point. As regards local infiltration in the anaesthetized subject, there are grounds for thinking that he can have but few true disciples to-day. The time taken in anaesthetizing the incision is too long to make it a very practicable step. Exponents of the art have been seen cutting as fast as ever their assistants can inject the novocain or procain solution—apparently in blissful ignorance that these drugs need several minutes in which to act as anaesthetizing agents. Such methods are a travesty of the practice of anoci-association. Crile's after-treatment of peritonitis is interesting; it consists of vast hot packs over the entire abdomen spreading well down over the sides; injection of 5 per cent. sodium bicarbonate and 5 per cent. glucose solution into the rectum as long as tolerated; gastric lavage if vomiting continues; the subcutaneous injection of 2,500 to 3,000 c.cm. saline solution every twenty-four hours till danger is past; and morphine by hypodermic injection until the respiration falls to 10 or 14 a minute. With this last point in treatment many will probably disagree. There is no definite dose; the drug is administered frequently until the respirations fall. It needs some courage in its application, but seems to act well in all save streptococcal cases. If the proof of the pudding is in the eating, Crile's recipe is the best yet made known, for at Cleveland they have treated 409 consecutive cases of acute appendicitis, with and without general peritonitis, without a death. He remarks that they have reduced their mortality by 67.6 per cent. for acute appendicitis alone. This was presumably their original mortality, but if so it was unduly high.

MANICURE INFECTION.

A serious indictment of manicure has lately been published by Körbl,[2] a Viennese surgeon, who has observed no fewer than 32 cases of infection, some very alarming, resulting from this practice. In most of his cases the infection led to severe inflammation, requiring prolonged treatment, and produced more or less serious functional disturbance. Most of his patients did not consult him till conservative treatment had failed, and even free incisions had proved incapable of limiting the disease. The history of these cases, and the observations he had the opportunity of making in early cases, convinced Körbl that in practically every case the disease began as a cutaneous whitlow. In three cases it began in the finger-tips; in all the others it began in the tissues near the nail. It is pointed out that every step in the practice of manicure is liable to produce infection. First the protecting epidermis is opened, and the thin film connecting the base of the nail with the skin is incised and trimmed. Then, in the act of polishing the nail with pastes and powders, micro-organisms which have gained access to the subcutaneous tissues are securely sealed in. Finally, the manicurist massages and polishes the nail, driving the infectious material deeper into the lymphatic system. Examination of the pus showed that the staphylococci usually associated with whitlow were seldom present; in most cases the infection was mixed. The most prevalent micro-organisms were streptococci, and anaërobic bacilli; colon bacilli, as well as influenza bacilli, were also comparatively common. In four cases, three of which developed erysipelas, streptococci were found in pure culture. Infection may occur either during the manicuring or afterward. Of the two, primary infection is thought to be by far the most important. In a family of four persons, all under his treatment, the patients had used the same manicure instruments, but only in nine of his cases had the patients manicured themselves; all the others, including the three patients with erysipelas, had been treated by professional manicurists. All three patients were Hungarian merchants staying at a hotel where they were manicured in turn by the same person. No cultures could be obtained from the instruments used (they had probably been cleaned with alcohol), but the paste employed yielded pure cultures of streptococci. Körbl, who observes that the popularity of manicure has increased enormously, concludes his case against it with a reference to the possibilities of the conveyance of tuberculosis and syphilis to the devotees of this rite.

[1] *Journ. Amer. Med. Assoc.*, 1919, 73, 1655.
[2] *Wien. klin. Woch.*, February 5th, 1920.

CONVALESCENT HOME FOR PROFESSIONAL CLASS CHILDREN.

THE Convalescent Home for Children, established at Broadstairs some years ago by Sir Alfred Yarrow, was taken over as a military hospital during the war, but has now been restored to its original purpose, which is to help the children of professional and well educated people whose means will not allow them without assistance to give their children the change of air needed on recovering from illness. The youngest children received are 4 years of age; boys continue to be eligible until the age of 12 and girls until the age of 14. The usual period of residence is four weeks, but may be extended on the advice of the medical officer of the home. Two wards—one for boys and one for girls—are set apart for the reception of a limited number of cases more serious than are usually admitted to a convalescent home, and to these a lengthy stay in exceptional cases is granted. Children suffering from pulmonary tuberculosis, advanced heart disease, or from incurable complaints or liable to fits are not eligible. Nor can children be admitted who have within a recent period suffered from scarlet fever, ringworm, or any other infectious or contagious disease, or who have been in homes or schools where such diseases exist or have existed within four weeks. The contribution made by the parents of the child is 15s. a week. An efficient new nursing and domestic staff has been got together, and the whole home will be working to its full capacity very shortly. It stands in beautiful grounds close to and facing the sea; it is open all the year round, being well adapted for winter as well as for summer residence. The London offices, at 6, Holborn Viaduct, E.C.1, are in charge of a former matron of the home, and full particulars will be supplied on application to the Secretary. Yarrow Home appears to us to meet the needs of classes who are suffering through the present high cost of living, and we believe that the advantages it offers have only to be more fully understood by the medical profession for it to be constantly full, and even tempt the generous founder to enlarge it.

THE MAUDSLEY COURSES IN MEDICAL PSYCHOLOGY.

THE final arrangements for the courses of lectures and demonstrations at the Maudsley Mental Hospital, Denmark Hill, S.E., of which some particulars have already been given, are now being completed. It is intended that the lectures and demonstrations shall be given in the afternoon between 2 and 5; the final arrangements will be announced shortly. The course will consist of two parts: Part I will be conducted by Sir Frederick Mott, Dr. F. Golla, and Dr. J. V. Lowson. Sir Frederick Mott will give twelve lectures on the anatomy of the nervous system,

followed by practical instruction and demonstrations occupying eight sessions of two hours each. Dr. Golla will give twelve lectures on the physiology of the nervous system, accompanied by demonstrations in practical physiology intended to put students in possession of methods employed in minor research work in mental diseases; they will occupy ten sessions. Similarly Dr. Lowson, who is demonstrator of psychology in the University of Cambridge, will give ten lectures on psychology and eight sessions of practical work and demonstrations in the subject. Part II will consist of a series of lectures and demonstrations by several other authorities. Thus Dr. Hubert Bond will give twelve lectures on the diagnosis, prognosis, and treatment of mental diseases, followed by demonstrations of clinical cases by the medical superintendents of the London County Council mental hospitals and the medical officers of the Maudsley Hospital. Sir H. Bryan Donkin will give two lectures on crime and responsibility; Dr. F. C. Shrubsall two lectures, with demonstrations of cases, illustrating the practical aspect of mental deficiency; Dr. William MacDougall will give eight lectures on the psychology of conduct, and Dr. Bernard Hart six on the psycho-neuroses. In this part of the course Sir Frederick Mott will give six lectures with demonstrations on the pathology of mental diseases, including the symptoms and treatment of brain syphilis, and, in association with Dr. Golla, twelve clinical demonstrations in neurology. Further information and full prospectus can be obtained on application to the Secretary of the Fellowship of Medicine and Post-Graduate Medical Association, 1, Wimpole Street, W., or to the Asylums Officer, 13, Arundel Street, Strand, W.C.2. The fee for Part I or Part II separately is ten guineas each; for both parts fifteen guineas. The course has been arranged to meet the requirements for the Cambridge diploma in psychological medicine.

THE GENEVA RED CROSS CONGRESS.

THE first general council meeting of the League of Red Cross Societies opened in Geneva on Tuesday, March 2nd, and closed on March 9th. The proceedings began with a general assembly of the delegates at the Hôtel de Ville, followed by the inaugural meeting. The various sections met in the mornings and afternoons for detailed discussion of their separate subjects. In the evenings there were receptions of the delegates by the chairman of the Board of Governors, Mr. Henry P. Davison; by the Director-General, Sir David Henderson; by the Secretary-General, Professor Rappard; by the city and canton of Geneva, and by the International Red Cross Committee. A general meeting open to the public was held on Sunday evening under the presidency of M. Motta, President of the Swiss Confederation, when M. Georges Milsom gave a lecture on the origin, organization, and purpose of the League. The British delegates attending the Congress were the Hon. Sir Arthur Stanley, Sir Robert Philip, P.R.C.P.Edin., Dr. F. N. Kay Menzies, Sir Arthur Lawley, and Mr. Baddeley. On February 16th the Secretary-General of the League of Nations, Sir Eric Drummond, addressed a letter to the Director-General of the League of Red Cross Societies, expressing his council's lively interest in the forthcoming meeting, and welcoming the idea of the closest co-operation in the future between the two leagues. It will be recalled that under Article 25 of the Covenant the members of the League of Nations agreed "to encourage and promote the establishment and co-operation of duly authorized, voluntary, national Red Cross organizations." During the congress a letter was received from Mr. Balfour, President of the Council of the League of Nations, appealing for the organization of an effort to relieve the terrible distress in Central and Eastern Europe. It was decided to formulate plans for extension of voluntary relief upon receipt of an assurance from the League of Nations that food, clothing, and transport would be furnished to the afflicted peoples.

SIR GEORGE MAKINS, G.C.M.G., C.B., President of the Royal College of Surgeons of England and Consulting Surgeon to St. Thomas's Hospital, has become President of the Fellowship of Medicine and Post-Graduate Medical Association, in succession to the late Sir William Osler.

Medical Notes in Parliament.

Hospital Provision in the Future.

LIEUT.-COLONEL FREMANTLE asked, on March 3rd, whether the Minister of Health was aware that the present uncertainty as to the future utilization of existing Poor Law infirmaries was hampering boards of guardians in their endeavours to make adequate provision for the needs of the sick, either by way of extension or improvement of their institutions; whether, in the interests of an early reorganization of health services, he would inform boards of guardians what was the policy of the Ministry with regard to these particular institutions, and the use to which they were destined to be put under the new scheme of health services which was contemplated; and whether the Minister was aware that the various health authorities in London and boards of guardians were particularly handicapped in making proper institutional provision for tuberculous persons owing to the failure of the Ministry as yet to carry into effect the declared policy of the Government with regard to the Poor Law. Dr. Addison replied that he was aware of the matters stated, but they involved questions of local government and other subjects of the first importance that could be dealt with only by legislation; and it was obviously necessary that he should lay proposals before Parliament and obtain its sanction thereto before he could properly adopt towards local bodies the attitudes suggested in the question.

Mr. Briant asked if the Minister of Health would take steps to co-ordinate the work of the Poor Law infirmaries and voluntary hospitals, so that persons requiring treatment should be sent direct to the most suitable institution, and should thus be saved the delay and danger of seeking admission at two or more institutions before obtaining the necessary treatment. Dr. Addison replied that he was aware of the case which Mr. Briant had in mind, and he would consider the question; but he had no jurisdiction over voluntary hospitals. Mr. Briant asked whether Dr. Addison did not realize that no effective medical administration in the country could be obtained if he did not draw a distinction between Poor Law infirmaries and hospitals. Dr. Addison responded that he was not quite sure that any effective administration would maintain that distinction. Mr. Briant invited Dr. Addison to introduce legislation to make it effective. The latter replied that no one was better acquainted with the complications of the subject than Mr. Briant.

Colonel Newman asked whether the Minister was aware that, owing to heavy taxation and the increase in the cost of living, large numbers of the middle class were unable to afford the expense of treatment and nursing in their own homes; whether he was aware that they were unable and unwilling to obtain admission to and further overcrowd the large hospitals maintained by voluntary contribution for the pre-war poorer classes of the community; and what action he proposed to take to meet their necessities. Dr. Addison said he was fully aware of the pressure upon the voluntary hospitals. The general question of the provision of hospital treatment had for some time been engaging the attention of the Medical Consultative Council, from whom he was expecting a report shortly.

The Revised Service Pensions.

The Government decisions on the second special report from the Select Committee on Pensions were announced, on March 4th, by Sir L. Worthington-Evans in a written answer of much detail to questions addressed by several members. This reply is given in full in Hansard of the date named, but cannot be understood without reference to the report already mentioned, which has been issued as a White Paper from the Stationery Office.[1]

The Government has accepted the majority of the forty-nine recommendations made by the Committee. The estimated cost of the committee's recommendations, including the continuance of the 20 per cent. bonus, would have been £3,000,000. The estimated cost of the improve-

[1] Parliamentary paper 247. H.M. Stationery Office. Price 3d.

ments accepted by the Government is £1,900,000. In particular it has accepted the whole of the recommendations as to the disability scales of pay of regular and temporary officers, contained in paragraphs 16 to 27 of the report. There were two methods by which a scale could be constructed where allowance was to be given both for service and rank, and for disability: (1) a service-and-rank scale, with additions for disablement, or (2) a disablement-and-rank scale, with additions for service. Broadly speaking, the first method was adopted in 1917, and the departmental committee hold that the existing scheme is appropriate and equitable; but they reviewed it to advise various alterations and alternatives providing for composite rates, and in some cases large additions to the scale. The recommendations with regard to officers' widows' pensions and allowances for children have been accepted with slight modifications. It is pointed out that officers and their dependants need not apply to the Ministry for the increased rates of retired pay or pension. The work of reassessment will be carried through as rapidly as possible, and payment will be made as from April 1st, with arrears from that date.

The suggested increases for matrons and nurses are approved. Proposals made to the Treasury on behalf of the Special Grants Committee that aid may be given where a service nurse's relatives are dependent on her for support are approved. It is agreed also that if existing powers under the Dispensing Warrant for dealing with civilian nurses disabled on war service are insufficient further consideration will be given to cases of hardship. The question of compensation to the general service section V.A.D.—that is, to women engaged on ancillary duties—will be considered by the War Office.

Part 3 of the report—dealing with treatment and training—has been referred to the Ministry of Labour. It raises the question of providing more buildings and land quickly by Government purchase.

National Insurance Arbitration.

In reply to Sir Philip Magnus, on March 8th, the Minister of Health stated the result of the arbitration on the rate of remuneration (reported in the SUPPLEMENT this week). Proposals, he said, would be submitted to Parliament in due course to give effect to the finding. The utmost goodwill existed on both sides, and he expressed sincere appreciation of the impartiality and services of the arbitrators.

Insurance Practices.—Major Prescott asked the Minister of Health, on March 3rd, when the Regulations 16/I.C. of the Government Insurance Act came into operation, medical panel practitioners would be deprived of the advantage of the capital values of their practice; whether a promise was given in 1913 to the effect that such an interest would be assured to the medical practitioner; whether panel practitioners were apprehensive of the effect of these regulations upon the disposal of their practices, and if so, would he take into consideration the expediency of reviewing the situation? Dr. Addison replied that he was not aware that any promise had been given in 1913 or, indeed, any time of the character indicated in the question. He was aware that some insurance practitioners were apprehensive—unnecessarily so—of the effect of the Regulations referred to, and he was sending Major Prescott a copy of a reply he had addressed to representations made to him on the subject on behalf of the Conference of Panel Committees.

Work of the Ministry of Health.—On a supplementary vote of token value for the Ministry of Health, on March 9th, Dr. Addison gave a short review of the work of the Ministry of Health. During demobilization Great Britain, like other countries, had been exposed to the risk of the introduction of diseases rampant in some of the famine districts in Europe, and it appeared that the Port Sanitary Authorities, owing to lack of funds, were unable to provide the necessary staff and apparatus. The scheme proposed would authorize the Ministry of Health to contribute 50 per cent.—probably a total of several thousand pounds—in next year's vote towards the approved expenditure of Port Sanitary Authorities for the purpose indicated. The Ministry had been encouraging the employment of nurses and health visitors at child welfare centres. During the past year 400 additional centres had been set up, and he hoped many more would be provided during the next financial year. Midwifery centres also were being extended, and additional midwifery services had been provided for populations of 200,000, and fifty additional maternity homes had also been established. The infant mortality rate last year was 98 per 1,000—the lowest on record. Turning to medical service under the Insurance Act, he said that medical men recognized that many patients were not getting good enough services, and the profession had heartily co-operated with the Ministry in seeking to attain a standard which would make it certain that insured persons would get as good treatment as ordinary patients. In conclusion, Dr. Addison referred with pleasure to the intended appointment of medical referees and consultants.

Small-pox in East London.—Sir Alfred Yeo asked the Minister of Health, on March 4th, what steps he proposed to take with regard to the serious state of affairs in connexion with the ex-Government stores being dumped at Bell Wharf, Bromley-by-Bow, E., and the reported death of one woman working in the wharf and the isolation of five other persons from the same place, one of whom was in the service of the medical officer of health of the Poplar Council, and what steps he proposed to take to rid the neighbourhood of the cause of the outbreak. Dr. Addison replied that the Minister, in conjunction with the sanitary authorities, had been taking active steps for some time past in endeavouring to check the spread of infection from the different centres to which it had been traced from the source indicated amongst the population largely unvaccinated. The value of the stores dumped was about £250,000. The small-pox had now spread to various other places in the district. Burning it up would not remove the danger.

The Inspection of Dairies.—Lieut.-Colonel Fremantle inquired, on March 3rd, on what date the Milk and Dairies Consolidation Act, 1915, and the Tuberculosis Order of 1913 should come into force; and whether under both the Acts and the Order whole-time veterinary surgeons were to be appointed to carry out the requisite inspections. Dr. Addison said that the question of the appointment of whole-time veterinary officers was under consideration in connexion with the bill which it was proposed to introduce to amend the Milk and Dairies Act before bringing that Act into operation. The part of the question relating to the Tuberculosis Order should be addressed to the Ministry of Agriculture and Fisheries. Operations must be delayed until the modifications proposed in the new bill are in force. Lieut.-Colonel Fremantle: Is there any chance of the bill being brought in this session? Dr. Addison: Yes, I hope so.

Death Rate of Illegitimate Infants.—Dr. Addison, asked on March 3rd by Mr. Raper whether the death rate of illegitimate children was double that of other children, stated that the death rate of children under one year of age during 1918 was 91 per 1,000 in the case of legitimate children, and 186 in the case of illegitimate.

Government Lymph.—In a written answer to Mr. R. Young, Dr. Addison, on March 4th, said he was not aware that a sample of calf lymph submitted to the Wassermann test had given a strong syphilitic reaction; he would be glad if the hon. member would give him full particulars of the case referred to.

Retired Surgeon Commanders.—Sir C. Kinloch-Cooke asked, on March 3rd, whether the First Lord of the Admiralty was aware that some twenty-five surgeon commanders (fleet surgeons) had been placed on the retired list after reaching the ages of 55, or completing thirty years' service, and notwithstanding that many of them were called up in August, 1914, and had served throughout the war, some as surgeon captains, their retired pension was only 10 per cent. higher than the rate fixed for surgeon commanders forty years ago; and whether the First Lord would consider the possibility of increasing the pensions as had been done in the case of officers in other branches of the service. Mr. Long replied that a number of surgeon commanders (fleet surgeons) who retired before the war on reaching the age of 55, or on completing thirty years' service, were called up during the war and served in the rank they held on the retired list, whether surgeon captain or surgeon commander. The exact number could not, however, be ascertained without examining each case separately. While re-employed, such officers received, in addition to the full pay and allowances of their rank, a bonus of 25 per cent. of their full pay, in lieu of counting the additional time served towards increase of retired pay. Under these conditions of service, they would not have been entitled to increase of retired pay; but, in accordance with the general arrangement made in the case of retired officers, who served in a service capacity during the war, their retired pay was reassessed on the new scale at the rates applicable to their age and rank at the date they originally retired. In the majority of cases the rate of retired pay was thus raised from £547 10s. to £600 per annum. The procedure adopted in reassessing the rates of retired pay of surgeon commanders called up for service in the war had been exactly the same as that adopted in the case of officers in other branches called up for service. It was true that the increase of retired pay was proportionately not so great in the case of the surgeon commanders in question as in the case of certain other ranks, but some dissimilarity in this respect was inherent in any scheme which was framed to put the different branches of the Naval Service as far as possible on the same basis.

National Service Medical Board.—Mr. Doyle, on March 3rd, asked the Minister of Health what action he proposed to take on the report of the National Service Medical Board, analysed in our issue of last week (p. 331) on the physical examination of men of military age in the year ended October 31st, 1918. Dr. Addison replied that it was quite impossible to set out within the limits of a reply to a parliamentary question the very large variety of ways in which the causes and the treatment of diseases were being taken up. The number of houses for which the acceptance of tenders had been approved had increased during the last three months from about 12,000 to about 60,000.

Pensions Medical Officers' Salary.—In reply to Captain Loseby, Sir L. Worthington-Evans said, on March 4th, that the salaries of all medical officers who had been duly appointed to the staff of the Ministry of Pensions were punctually paid at the end of each month. In some cases there had been delay in the formal appointment of medical officers who had taken up duty in advance of appointment, and were thus temporarily without pay. He was making inquiry into this.

England and Wales.

HEALTH OF LIVERPOOL.

THE Medical Officer of Health for Liverpool, Dr. Hope, considers that the Registrar-General's estimate of the population of the city, based on the last decennial census, is at least 70,000 below the real number. He goes on to express the opinion that a quinquennial census would be much more satisfactory from a public health point of view. Dr. Hope's return for the same week was 24.7 per 1,000 as compared with the Registrar-General's figure, 27.2. Measles is unfortunately prevalent in the city, and many of the patients are infants of 12 months old, whose removal from the mother to the hospital might endanger their recovery. The hospital accommodation is not sufficient to meet the requirements. Last week there were 842 cases of measles, and the previous week 720.

THE SPECIAL NEUROLOGICAL BOARD, LANCASTER GATE.

At a dinner held in the Great Central Hotel on February 28th Dr. W. A. Brend was the recipient of a presentation consisting of an inscribed album, a silver rose-bowl, and a complete edition of *Pepys's Diary*, from over sixty past and present members of the Special Neurological Board and Clinic. In making the presentation the Chairman (Dr. Muirhead Martin) expressed the personal regard of the staff for Dr. Brend and their admiration of his work during the term of his presidency of the board, now brought to a close by his appointment as Neurological D.C.M.S. for the London Region. Dr. Brend, in reply, referred to the difficulties overcome before the board attained its present influential position, and commented on the growing importance of its treatment branch and clinic in the development of psychotherapy. Dr. H. E. Davison, who succeeds to the post of President, was also a guest, and the other speakers were Drs. Charlton Briscoe, P. Bousfield, Danvers-Atkinson, Duncan, David Forsyth, Laing Gordon, and Travers-Smith.

MEDICAL STAFF OF THE LONDON COUNTY COUNCIL.

It was reported to the London County Council on March 2nd that the present medical staff of the Public Health Department was insufficient to meet the growing requirements of the work. It is proposed to have for the general work nine instead of seven divisional medical officers. Five of these nine will be in charge of the five geographical divisions, and the other four will be in charge of special departments of work—namely, one in the bacteriological laboratory in connexion with infectious diseases; another in connexion with venereal diseases, infant life protection, midwives, and lying-in homes; a third on tuberculosis work; and a fourth on special school medical work (treatment of ear cases). The special staff engaged on school medical work is also to be increased by creating eight whole-time officers in place of seven part-time ones. The salaries of the divisional medical officers are to be readjusted. The maximum will be £700 a year instead of £600; this increase is to take effect from January 1st, 1920. These figures are on the pre-war basis; with the temporary additions or war bonus the annual remuneration will be £650 to £875.

THE HOSPITAL QUESTION IN KENT.

We gather from the *Kent Messenger* that the question of hospital accommodation in the county of Kent is engaging attention. There are two aspects: in the first place the voluntary hospitals are in financial straits, and in the second place the accommodation is said to be insufficient. There are voluntary hospitals at Ashford, Folkestone, Canterbury, Margate, Tunbridge Wells, Maidstone, Rochester, Gravesend, and Sevenoaks. At the annual meeting of the West Kent General Hospital, Maidstone, an appeal was made for a sum of £100,000 to make additions to the present buildings so as to raise the number of beds to 105. Dr. Travers, in supporting the appeal, said that the hospital at present had fifty-five beds occupied, but that as many as seventeen urgent cases had been sent to the hospital in a single week, and there was at present a waiting list of seventy. He considered that a convalescent home at a distance would not meet the need, as many of the cases sent to the hospital required active surgical and medical treatment, and many could not be moved out to the country for some weeks. In a letter to the newspaper Dr. Barclay, who was formerly in charge of a state hospital in New Zealand, has suggested that the disused aerodrome buildings at Detling Hill should be utilized. The buildings, he says, are about to be sold; after visiting them he came to the opinion that they could be adapted without serious alteration for chronic cases and those needing chiefly nursing, fresh air, and good food. The hospital at Maidstone could then remain for the reception of acute cases. The proposal, as we have indicated elsewhere in this issue and on several other occasions, seems in principle on the lines of proposals made for several other towns.

Scotland.

CENTRAL MIDWIVES BOARD FOR SCOTLAND.

AT a meeting of the Central Midwives Board for Scotland, under the presidency of Sir Halliday Croom, a number of disciplinary cases were considered. In two instances certified midwives were charged with failure to notify ophthalmia neonatorum; one was suspended for three months and the local supervising authority instructed to report thereafter with reference to her ability to take and record the temperature and pulse. In the other case the Chairman said that such offences could not be adequately dealt with by censure or caution, but that the midwife would be allowed an opportunity of proving amendment, the local supervising authority being requested to report at the end of three months. A midwife who had failed to notify stillbirth was reprimanded, and judgement on other breaches of the rules was deferred, the local supervising authority being requested to furnish a report within three months. The name of another midwife, who was charged with having been in contact with a patient suffering from puerperal fever and failing to make the required notifications and take the necessary precautions, was removed from the roll of midwives and her certificate cancelled. The names of three other women were directed to be removed and their certificates cancelled. In one instance the woman had been convicted of keeping an improper house, another had been sentenced to three months' imprisonment for theft and fraud, and a third had been sentenced to eighteen months' imprisonment for using instruments with intent to procure abortion.

Ireland.

ULSTER MEDICAL SOCIETY.

AT the meeting of the Ulster Medical Society on February 26th, when the President, Mr. Andrew Fullerton, C.B., C.M.G., F.R.C.S.I., was in the chair, Dr. Thomas Houston read a paper on the classification of streptococci, in which he related the observations made by himself and Dr. J. McCloy in the Base Hospital, Étaples. Dr. H. P. Malcolm described his experiences of streptococcal septicaemia in France, and Dr. W. J. Wilson gave an account of the various organisms isolated in cases of gas gangrene. Before the close of the meeting one of the members referred to the purchase of "Graymount," Belfast, by the Corporation, as a sanatorium for surgical tuberculosis. Considerable discussion ensued, and dissatisfaction was expressed that the profession and the public had not been informed about the matter.

THE Ministry of Health has issued a handbook, entitled *Maternity and Child Welfare Centres in England and Wales* (H.M. Stationery Office, through any bookseller, 1s. net), which is a directory to such institutions. It appears that there are in London 203, in the county boroughs 391, and in the counties 1,124. Of the total, 679 are maintained by voluntary societies.

Correspondence.

DYSPEPSIA.

SIR,—As methods of precision in diagnosis develop the treatment of dyspepsia is falling increasingly into the hands of the surgeon. That tendency may prove a permanent or a passing phase. The diagnosis also, in obscure cases at least, of dyspepsia is being more and more laid on him, and he feels the need of help from physician, physiologist, and pathologist. The columns of the JOURNAL have recently contained two important articles, the one entitled "Disappointments after gastro-enterostomy," from the pen of Sir Berkeley Moynihan (BRITISH MEDICAL JOURNAL, July 12th, 1919), and the other, "Dyspeptic and other referred symptoms associated with disease of the gall bladder and of the appendix," from that of Sir Humphry Rolleston (BRITISH MEDICAL JOURNAL, March 6th, 1920). Both articles indicate the somewhat widely separated sources of origin of the symptoms of dyspepsia—the biliary apparatus, the appendix, the duodenum, etc., in addition to the stomach itself.

In the JOURNAL of November 15th, 1919, in an article entitled "Remarks on the frequency, diagnosis, and treatment of chronic pancreatitis," I indicated the pancreas as an important source of dyspeptic symptoms, and in that article, and the correspondence that followed, pled for systematic examination of the pancreas as possibly the sole or the associated source of obscure dyspeptic symptoms. Such systematic examination, by means of microscopic examination of a *fresh* portion removed by the surgeon from the living gland, has, as I indicated, convinced me that chronic or subacute pancreatitis is the sole or the associated source of the symptoms in many cases of dyspeptic troubles, and, further, that certain supposed signs of pancreatitis on which we have hitherto relied are either unreliable or present so rarely as to be valueless, more especially in the early stages of the trouble.

The structure and the functions of the pancreas are apparently complex and at present ill understood. It stands, as I recently pointed out (BRITISH MEDICAL JOURNAL, January 24th, 1920), somewhat alone amongst the tissues in the rapidity and intensity of *post-mortem* changes. Autolysis is so rapid that examination of fresh specimens taken from the living gland, in the course of an abdominal operation, alone yields reliable results as to the presence or absence of morbid changes, and therefore of the value of the various alleged signs of, and tests for, the existence of pancreatitis.

I venture to renew my plea for the routine examination by the surgeon of the pancreas in all cases operated on for actual or supposed gastric, appendicitic, duodenal, and biliary symptoms, and to suggest certain of the questions awaiting answer:

1. What proportion of cases of pancreatitis is accompanied by cholelithiasis? My results give it as small.
2. What proportion of cases of pancreatitis is accompanied by catarrhal gastric, duodenal, and biliary apparatus affections? My results give it as large.
3. What proportion of cases of pancreatitis is accompanied by excess of dextrines in the urine? Except in cases of advanced pancreatitic cirrhosis, my results give it as negligible.
4. Is excess of dextrine confined to cases in which the islands of Langerhans are affected?
5. Does the pancreas, in addition to its digestive secretion, produce an "internal secretion," and, if so, of what nature and function?

—I am, etc.,

Glasgow, March 6th. JAS. H. NICOLL.

"INTRAVENOUS PROTEIN THERAPY."

SIR,—Dr. A. E. Gow rightly laments the confusion which has arisen in applying such a nomenclature as "protein" or "protein shock" therapy to the various cases under consideration. The latter term was first coined in America, and seems to have stuck more or less. The protein is used in two forms—(1) as bacterial emulsions (to which, indeed, the application of the term "protein" is utterly unscientific), and (2) as cleavage products of the simple protein molecule (proteoses). Each of these substances is used therapeutically in two distinct and opposing ways—namely, (*a*) in minute doses for immunizing purposes, and (*b*) in single (or more) massive doses for the purposes of the pyrogenic reaction ("shock" of American writers). From this it is evident that the expression "protein therapy" may mean anything, and the addition of the word "shock" conveys a false impression. It is therefore necessary to indicate so far as we can, by some nomenclature, which of these methods of treatment is specified.

Dr. Gow apparently seems to think the term "pyrogenic therapy," as applicable to the massive reaction, is defective for two reasons. The first is that certain non-protein substances may produce fever, and the second, that the clinical improvement cannot be ascribed to the pyrexia. I venture to think that these objections may be fairly met. If a non-protein substance can produce the desired reaction it may be just as good for use as a protein. The experiments with non-protein substances have hitherto only been made on animals, but the effects appear to differ in no way from those of proteins. Quite recently, however, the typical reaction seems to have followed the use of hydrogen peroxide in the human subject, as described in the *Lancet* (vol. i, 1920, p. 432) by Drs. Oliver and Murphy. Even if the non-protein substances were not suitable clinically, this does not affect the issue. We use only such pyrogens as are therapeutically appropriate, just as for purposes of purgation (to take an example) we use only certain purgatives, though many poisonous drugs are likewise capable of acting as purgatives.

As regards Dr. Gow's second objection—that the clinical improvement cannot be due to the fever—it is an instructive fact that all other workers at this subject are unanimous that the temperature production is the essential factor. Without the pyrexia no good can be effected. It also may be pointed out that the term "pyrogenic" does not refer to a possibly chance production of the symptom pyrexia, but refers to those substances themselves which act as pyrogens—a name given them by the late Sir J. Burdon-Sanderson. Nor is their capacity to produce fever a secondary or subsidiary one, caused by the liberation and mobilization of toxins in diseased conditions, as the fever is equally produced in the healthy subject, showing the substance to be a pyrogen in the true sense.—I am, etc.,

London, W., March 1st. A. G. AULD.

THE TRANSMISSION OF RELAPSING FEVER.

SIR,—With reference to the remarks by Dr. W. H. Willcox in your issue of February 14th, p. 222-3, on the possibility of there being methods of transmission of relapsing fever other than the louse, I quote some evidence to support his suggestion.

During the years 1906–7, and part of 1908, I carried on an extensive investigation of Indian relapsing fever, which resulted in the discovery of the body louse as the natural transmitter of the disease.

In the earlier part of the inquiry many possible sources of infection were studied, and in particular the blood, to see whether the disease required the interposition of an insect vector, or whether it could be transmitted by simpler methods, such as by contamination with one or other of the excretions.

It was shown in various ways that the blood during the febrile period (and less so during the apyrexial) was very infective to monkeys. Such blood, when brought into contact with the healthy uninjured skin, did not produce the disease, but if a few hairs were pulled out or minute abrasions made on the skin, the application of infective blood invariably resulted in the infection of the experimental animal.

Similarly, if an infected and a healthy monkey were laid side by side and several passages made from the one to the other by pricks with a grooved needle, the healthy monkey became infected on each occasion.

It was found also that when a few cubic centimetres of infected blood were introduced with a soft, well-greased rubber catheter into the oesophagus of a monkey, the disease was regularly transmitted by this means, even though the risk of abrasion of the surfaces was almost certainly excluded.

During the course of these investigations two of my assistants developed relapsing fever in the laboratory after doing autopsies on infected animals. They had no recent cuts or abrasions visible to the eye, so that the spiro-

chaetes must have gained entry by means of microscopic abrasions such as may generally be found around the nails.

A case is on record from another laboratory in which an investigator received a spurt of blood into his eye from a cut vessel whilst operating on an infected animal. Notwithstanding the fact that the conjunctival sac was washed out, he developed relapsing fever after the usual incubation period.

These facts show that the spirochaete has no obligatory cycle of development before it becomes infective after leaving the mammalian host, though this does not disprove the possibility of an alternative cycle of development in its arthropod vector.

When my investigations had reached this stage and when a year's close study of the supposed potentialities of the bed-bug had yielded negative results, a series of cases of relapsing fever were observed to be occurring amongst the staff of a big lying-in hospital in Bombay, which I was directed by Government to investigate. It was shown that these cases were almost certainly being infected by contact with fresh blood. What happened was briefly as follows:

1. There was a small but widespread epidemic of relapsing fever in Bombay at the time.
2. This disease almost invariably produces abortion in pregnant women.
3. Women suffering from abortion and miscarriage were coming to the hospital in a highly infective state to be treated.
4. Spirochaetes could be found in the placental blood.
5. Doctors, students, and nurses who came into contact with fresh blood became infected. Cotton gloves (or none at all) were in use in the theatre.

None of the surgical staff of the big general hospital in the same compound contracted relapsing fever. This may have been due either to the fact that rubber gloves were worn at operations or more probably to the fact that operations would not be undertaken on patients who were suffering from relapsing fever or other pyrexial diseases.

It is true that at this time the real insect transmitter was not known, and it was not until some months later that I had the opportunity of investigating another epidemic with quite different epidemiological features, as the result of which I was able to point to the body louse as the true vector of relapsing fever. On reconsidering my evidence as to blood transmission in the light of these new facts, I was still able to adhere to my opinion that the series of cases in the lying-in hospital were due, not to insect transmission, but to contact with fresh blood.

Dr. Willcox's clinical acumen has led him to the same conclusion in his experience in Mesopotamia. His suggestion as to the transmission of relapsing fever through human faeces is not supported by experimental evidence, nor in my considerable experience by clinical evidence. I have repeatedly tried, but always failed, to infect monkeys by the subcutaneous injection of faeces, urine, and vomit taken from patients at the height of their infection. Microscopical evidence on this point would be valueless, as all these excretions contain spirochaetes under natural conditions. Experiments on monkeys, however, provide a very delicate test, as not one of my series of over a hundred monkeys failed to become infected even when the dose of virus was minute.

The practical point is that though the ordinary carrier of relapsing fever in Europe, Asia, and Northern Africa is assuredly the louse, a more direct transmission from person to person does take place under exceptional circumstances—namely, by the contact with, and subsequent absorption of the virus from, freshly shed infective blood.

Whilst on this subject I venture to refer to the question of priority of the discovery of the louse as the carrier of relapsing fever. This should fairly be placed to my credit (vide "The part played by *Pediculus corporis* in the transmission of relapsing fever," BRITISH MEDICAL JOURNAL, December 11th, 1907). This reference appears to have been overlooked by some writers on the subject, whilst some have referred to it merely as a "suggestion." The observations made in that paper were confirmed by Sergent, Graham Smith, and others, but particularly by Nicolle and his associates, who extended and amplified the original observations. The latter also corrected me as to the exact method of transmission by the insect, showing that it was brought about by the crushing of the body of the infected louse into an abraded skin surface rather than by the insect's bite. Other observations of mine showed that the buccal secretions of some infected lice swarm with spirochaetes, and the significance of this has yet to be explained.

It should be remembered that the transmission of relapsing fever was known before the louse hypothesis was applied to the transmission of typhus fever, and the close epidemiological similarity between the two diseases suggested their being carried by the same agency.—I am, etc.,

F. P. MACKIE,
Major, I.M.S.

Bristol, Feb. 29th.

THE TREATMENT OF MALARIA.

SIR,—In the expressions of opinion in your columns on the treatment of malarial fever in the tropics there seems to be little variance, but what concerns the general practitioner is the anti-relapse treatment in this country where reinfection is unlikely.

My experience of the treatment of malaria in tropical Africa from 1900 until recently is similar to that of Drs. Taylor, Law, and Collett, and, like the last-named, I have seldom had to resort to other than the oral method of administration. Cases do occur, but they are distinctly rare.

Since demobilization I have treated many hundreds of ex-soldiers suffering from recurrent malaria in this country. In the majority there has been little or no clinical evidence of the disease, but at the same time a considerable number show some splenic enlargement. The improvement in practically every genuine case is so marked that there can be no two opinions about the efficacy of the routine treatment which has been adopted by several of us working alongside each other. The treatment is simple. Every genuine case is given 10 grains of quinine sulphate in solution daily before breakfast; this is continued for a month. The patient is then seen again, when the same daily dose is repeated for another month or increased to 15 grains should the case require it. The treatment is completed at the end of three months should no relapse have occurred during that time. The patient is then given a tonic for as long as he requires it. Under this treatment I have only met with one case in which the spleen did not return to normal within three months. In the large majority of those who take their daily dose of quinine regularly no relapse occurs, but it has been found that in a small minority of the regular quinine takers slight relapses will occur, but that these will soon cease if the treatment is persevered in.—I am, etc.,

R. E. DRAKE-BROCKMAN, M.R.C.S.

London, S.W., Feb. 26th.

SIR,—As I find that the treatment of malaria by *intramuscular* injections of quinine salts is still recommended for certain classes of cases by some authorities, I wish to point out that this method was condemned by the medical service of the E.A.E.F. ("German" East Africa).

The intramuscular injection of quinine causes extensive necrosis of muscle, and its therapeutic value is negligible when compared with the other methods of administration, oral, intravenous, or subcutaneous.—I am, etc.,

AUGUSTUS R. BALMAIN, M.B., B.S.Lond.,
Captain R.A.M.C.(S.R.), late of E.A.E.F.

London, S.W., Feb. 28th.

MEASUREMENT OF EMOTION.

SIR,—The experiments of Professor A. D. Waller on the above subject (February 21st, p. 259) are very interesting to me as corroborative to a very small extent of the epoch making work of my friend Dr. Albert Abrams of San Francisco.

It is quite eight or ten years since Abrams showed that the electric discharge from the human body chiefly occurs at the tips of the fingers and toes; the discharge is greater in the light than in the dark, and, contrary to generally accepted opinions, greater in dry than in damp weather. As an absolutely dry atmosphere is a more or less perfect insulator, he legitimately concludes that human electric potential is high. He has also shown that the polarity in the normal male—I say normal because there are a good many asexual individuals about—is positive in the right hand and foot and negative in the left; in the normal female during the child-bearing age the polarity is

reversed; the polarity can also be reversed by throwing a yellow handkerchief over the head of the subject. In some highly strung individuals the discharge from the right hand in the male and the left in the female is sufficient to neutralize the south pole of a six-inch bar magnet.

Abrams ascribes these effects to electronic energy, not simply in the cell but in the atoms of which the cell is composed, and he holds that radio-activity is a universal property of matter, and not simply confined to the dozen elements or so to which physicists limit it.

I think it is within the experience of very many individuals that any painful or disagreeable emotion causes tingling or the so-called "pins and needles" at the tips of the fingers. In your own case, when Dr. Waller aroused a disagreeable memory, there was a great deflection in the mirror galvanometer. There must be a great many disagreeable reminiscences stored up in the substrata of your encephalon; get someone to rake them up, and you may be able to corroborate my observation at your finger-ends without any Wheatstone bridge or galvanometer.

In executions it has been long known that emissions of semen not infrequently take place. This has always been ascribed to the effects of strangulation congesting the penis and testicles, but it occurs as frequently in fracture of the neck as in the slow process of strangulation, and in my opinion takes place before the execution in the dread anticipation of what is going to happen.

In epileptics the high electric potential can be drawn off from any part of the cranium, and in order to lessen the electrical resistance of the scalp in such cases I have been lately having it rubbed night and morning with a 5 per cent. solution of acetic acid. I could easily fill several journals with an account of Abrams's valuable work, but this will perhaps suffice to whet the appetite of the curious for something new.—I am, etc.,

Liverpool, March 1st. JAMES BARR.

PUBLIC HEALTH VERSUS THE STATE.

SIR,—In the argument which has followed the publication of Dr. Baskett's paper, I admire greatly the author's persistence in keeping his critics to the point. As I read it, the statement of his case is this: State "paternalism" is designed to assist the poorer classes; "paternalism" is costly; the larger part of the cost is passed on to the poorer classes in the increased price for commodities (the poorer classes being the largest consumers owing to their enormously preponderating numbers); thus the cost of "paternalism" tends to reduce "real" wages; reduction of real wages means destitution, or at all events privation.

As a corollary the mortality from any disease which depends on privation or destitution is bound to increase—or to fail to decrease as rapidly as it otherwise might—under any system of State "paternalism." Hardly any happening in Nature is due to one factor alone; and it is probable that in emphasizing—quite justly—what seems to him the most important factor, Dr. Baskett may be under-estimating the value of other factors. But the arguments of his opponents seem to me so unconvincing that I venture to make a deduction from Dr. Baskett's conclusions.

The financial difficulties of the country are supposed to be very great. Yet we are overwhelmed with the schemes of "reconstructionists." All these schemes are costly; nearly all involve interference by the State. There is a crusade in contemplation against a C3 population. In this crusade the Consultative Medical Council of the Ministry of Health is not unlikely to find itself involved. It is permissible, therefore, to hope that every member of that Council has duly weighed the argument put forward by Dr. Baskett, and that no scheme of medical services will be put forward in the report shortly to be published unless it is reasonably certain that the results will be in some measure commensurate with the costs involved. It seems too often forgotten that the greater part of State activity is unproductive, although we are assured on all hands that the need of the hour is production. If unproductive work is necessary, let it not be unreasonably costly.—I am, etc.,

London, W., March 5th. CHAS. BUTTAR.

TREATMENT OF THE RUNNING EAR.

SIR,—The object of my original letter (August 23rd, 1919, p. 253) was to emphasize the fact that non-operative treatment will produce surprisingly good results in many cases if thoroughly carried out. In my opinion the essence of such treatment is the cleansing and drying of the meatus, and in that respect Dr. MacGibbon (February 28th, 1920, p. 294) apparently agrees with me. Syringing is not a "modern" method, although probably more so than "sponging out the discharge." The object of each is the same, and they are probably equally effective, but, while the former can be carried out by others, the latter, to be efficient, requires the attendance of the surgeon twice daily. This I have found a practical bar. The figures I gave were based on the duration of discharge, because, under the circumstances, the records which I was able to keep did not allow of a classification into true clinically chronic cases and those of prolonged acute conditions. The former, however, predominated. I had no intention of implying that operative treatment had no place in the treatment of cases of suppurative otitis media, as that would be absurd. In my opinion the antrum is involved at some stage in all cases of otitis media. The important factor is the freedom or otherwise of drainage from this cavity. Failure of resolution in an acute case is usually due to deficient drainage from the antrum, and the drainage provided by an operation is necessary, and in my opinion increasingly employed. The results of operation in unresolved acute cases are almost uniformly successful. As to operation in chronic cases, the results of the radical operation are not nearly so good, discharge recurring or persisting in nearly 50 per cent. of cases. In my opinion this operation should be reserved for cases in which some decided indication exists.

No mention was made of the great importance of any necessary treatment to nose or nasopharynx, as this is generally recognized, and the object of the letter was to emphasize a particular point rather than to write an essay on the treatment of suppurative otitis media. Space and the tolerance of your readers limited me then and do so now.—I am, etc.,

Bristol, March 1st. A. J. WRIGHT, F.R.C.S.

COMMISSIONS IN THE INDIAN MEDICAL SERVICE.

SIR,—Would you kindly allow me to add my testimony to what has been stated by Lieut.-Colonel R. H. Elliot, I.M.S., in your issue of February 7th, and in a previous communication, regarding temporary commissions in the Indian Medical Service for young medical men? The conditions offered by the Government of India to approved candidates are as good, if not better, than those of any other Government service in India at present. It is possible that those conditions will be further improved. There are some of us who can remember drawing Rs. 286.10.8 for a year or so after joining the service. Notwithstanding the greatly decreased purchasing power of the rupee the pay now offered is in every way higher than it was.

There is, I believe, a desirable temporary career open in the Indian Medical Service to young men with the best professional attainments at the present time. I write with a knowledge of the arguments for and against such a career.

There are several special reasons for accepting temporary commissions. If at the end of two years the officer finds the Indian Medical Service unsuitable he has been through a useful experience. It may be that before long permanent Indian Medical Service officers after serving for seven or eight years will be allowed to relinquish their commissions with a substantial gratuity, as is the case in the Royal Naval and Royal Army Medical Services.

At the present moment no prudent person would have the temerity to prophesy what the Indian Medical Service is likely to be, say, ten years hence, or what changes may take place in the Medical Services of India as a whole during that time; if the improvements one has in mind regarding leave, study, duty, free passage home periodically, etc., are published, then I would strongly recommend the Indian Medical Service as a permanent career. These opinions are entirely personal.

I would advise young medical officers going out to join the Indian Medical Service not to purchase more clothes and boots than is absolutely necessary, as most articles of wear are cheaper in India than at home at present. I have recently returned from India, and regret not coming home with a replete wardrobe.—I am, etc.,

P. HEHIR,
Major-General I.M.S.

London, March 7th.

THE TERRITORIAL FORCE.

SIR,—I am in entire agreement with "Hard Hit" in his pungent criticism of the Territorial Medical Service. Dr. Buttar either takes things lying down or has not been a T.M.O. During the recent war I started as captain, saw four years nine months' service and was demobilized, still in the same rank, all for 5s. a day less than the conscripts. I am told that I cannot resign, but I mean to resign at the first opportunity and have done with such niggardly treatment, and I shall advise all my friends not to join the T.F. until patriotism is not counted for evil.

I am a specialist in a particular region of the human anatomy, but was I given a special job? Oh, dear no. For the greater part of my service I was doing work which any clerk could have done. Was this the case with the A.M.S.? Oh, dear no. A great many of the London men were made major-generals with corresponding emoluments, honours, and titles. Was any Territorial M.O. made a major-general? I think not. At any rate, I was not. I was only one of the poor fools who joined up twelve years ago. But "Hard Hit" and I both look to the British Medical Association to secure for us our arrears of pay.—I am, etc.,

CONSULTING SURGEON.

March 8th.

*** So far as we can ascertain eight temporary colonels were promoted to be major-general, and one colonel of the Medical Service of the Territorial Force Reserve, Major-General Sir R. H. Luce, K.C.M.G., C.B.

THE END OF THE WAR.

SIR,—Judging by the article on the "Notification Fee and the End of the War" in your issue of the 6th instant, you appear to be ignorant of the fact that the termination of the war has been fixed by Order in Council as occurring on January 10th, 1920; at least, it was so announced in the press. I presume, therefore, that the medical practitioner's fee for notification of a case of infectious disease will revert to 2s. 6d. from that date.—I am, etc.,

G. S. KEELING.

Attleborough, March 7th.

*** Our correspondent is mistaken. The Order in Council dated February 9th, 1920, and published in the *London Gazette* of the following day, declares January 10th, 1920, to be the date of the termination *of war with Germany*, and not that of the termination *of the present war*. We quote the last two paragraphs of the Order so that there may be no doubt about the matter:

"And whereas treaties of peace with other belligerents not having yet been ratified, it is desirable to declare the date which is to be treated as the date of the termination of war with Germany before declaring the date which is to be treated as the date of the termination of the present war:

"Now, therefore, His Majesty, by and with the advice of His Privy Council, is pleased to order, and it is hereby ordered, that the said tenth day of January shall be treated as the date of the termination of war between His Majesty and Germany."

EPIDEMIC DISEASES IN MAURITIUS.

SIR,—Your reviewer in criticizing (February 28th) my book on the *Epidemics of Mauritius* finds fault with the statement that the *Phlebotomus papatasii* is the carrier of dengue fever, and refers me to the recent work by Clelland and others in Australia who say that the *Stegomyia fasciata* is the carrier of that fever. Long before Clelland, Bancroft (of Australia) had accused the stegomyia, but both Daniels (*Tropical Medicine and Hygiene*, Part III, p. 130) and Manson (*Tropical Diseases*, p. 254) consider the experimental evidence inadequate, whilst Brumpt (*Précis de parasitologie*, p. 449) makes a distinct statement, which may be translated as follows:

The *Phlebotomus papatasii* transmits into man the pappataci fever, usually called dengue fever.

The researches of Doerr, Franz, and Taussig have shown that the phlebotomus after biting a patient with dengue fever can transmit the disease eight days after. They are the intermediary host of this affection.

The virus of dengue is transmitted by the phlebotomus, and also, according to Graham of Beyrouth and Ashburn and Craig of the Philippines, by certain mosquitos.

In *Memoranda of Medical Diseases in the War Areas* (Edition 1919, p. 199) it is stated that "dengue, undulant fever, etc., may be mistaken for phlebotomus fever"; and again (p. 48) that "the differential diagnosis between dengue and phlebotomus fever is not always easy, as both may assume atypical forms. Indeed, there are not wanting those who both in India and in Macedonia declare the two diseases to be identical. It must be admitted that the arguments adduced are very powerful, so much so that we are led to ask if the same disease may be transmitted by totally different insect vectors." Finally, Manson (pp. 324 and 326) draws attention to the possibility of mistaking three days' fever, seven days' fever, undulant fever, dengue, etc., for one another. Of course, I agree with the reviewer, the species' names should have been written in small letters. It was a lapsus.—I am, etc.,

D. E. ANDERSON.

London, W., March 1st.

Medico-Legal.

DRUNKENNESS IN MURDER CASES.

THE House of Lords on Friday last delivered their reserved judgement in the Beard case which was argued towards the end of November and which raised points of considerable interest and importance.

Beard had been sentenced to death for the murder of a girl of 13 whom he had ravished and accidentally suffocated by placing his hand over her mouth, his object being to prevent her calling for help.

His defence had been that he was drunk, and on that ground his counsel had pleaded that the verdict should be one of manslaughter. Mr. Justice Bailhache, in leaving the case to the jury, had directed them that this defence could only prevail if as the result of his condition the prisoner did not know what he was doing or did not know that what he was doing was wrong. The jury, however, returned a verdict of murder and there was an appeal to the Court of Criminal Appeal.

It should perhaps be explained that a criminal intent or, as it is decribed in legal language, *mens rea* is of the essence of every crime, and this being so a lunatic is obviously incapable of committing a crime and the test which at law has long been accepted as determining the question as to a man's mental condition is that which Mr. Justice Bailhache applied when he summed up the case of Beard to the jury.

Now there had been a case in 1909—Meade's case—in which the defence of drunkenness to a charge of murder had been considered by the Court of Criminal Appeal. In that case the prisoner had, whilst drunk, so brutally ill-treated a woman that she died, and on his appeal against the sentence of death which was passed upon him the Court of Criminal Appeal pointed out that a man is taken to intend the natural consequences of his acts, but that in the case of a man who is drunk this might be rebutted by showing that his mind was so affected by the drink he had taken that he was incapable of knowing that what he was doing was dangerous. "If this is proved the presumption that he [Meade] intended to do grievous bodily harm is rebutted."

Here again it is necessary to explain, because of its bearing upon the view which the House of Lords took of the decision in Meade's case, that there are many crimes in English law in which an intention to do a specific act forms an essential element of the crime. A man charged with the murder of a woman upon whom he has performed an abortion cannot successfully plead that he did not intend to kill her. According to English law everyone is presumed to have intended the natural consequences of his actions.

But there are many crimes in which there is an element of what may be called a specific intention. Wounding with intent to kill is one, attempted suicide is another. As Chief Justice Jervis once said, "If the prisoner was so drunk as not to know what she was about how can you say that she intended to destroy herself?"

Beard's case came before the Court of Criminal Appeal and that court, considering itself bound by its own previous decision in Meade's case, held that Mr. Justice Bailhache had dealt with the case in his summing up to the jury as one of insanity, and that the defence of drunkenness had not been properly left to

the jury, and reduced the verdict to one of manslaughter, and from this decision the Crown appealed to the House of Lords.

In that House the Lord Chancellor pointed out that according to the law of England as it prevailed until early in the nineteenth century, voluntary drunkenness was never an excuse for criminal misconduct; and indeed the classic authorities had broadly asserted that voluntary drunkenness must be considered rather as an aggravation than a defence, and referred to a case reported in 1562, in which it was said:

> If a person that is drunk kills another, this shall be felony, and he shall be hanged for it, and yet he did it through ignorance, for when he was drunk he had no understanding nor memory; but inasmuch as that ignorance was occasioned by his own act and folly, and he might have avoided it, he shall not be privileged therefor.

The Lord Chancellor then reviewed the cases on the point, remarking that the old rigid rule of the nineteenth century appeared gradually to have been relaxed, from which he drew three conclusions:

First, that insanity, whether produced by drunkenness or not, afforded a defence. He pointed out that the insane could not be convicted of crime, but on a verdict of insanity were ordered to be detained during His Majesty's pleasure. If actual insanity in fact supervened as the result of alcoholic excess it furnished as good an answer to a criminal charge as insanity induced by any other cause; he quoted Mr. Justice Stephen, who said, in deciding a case in 1881:

> Drunkenness is one thing, and the diseases to which drunkenness leads are different things, and if a man by drunkenness brings on a state of disease which causes such a degree of madness, even for a time, as would have relieved him from responsibility if it had been caused in any other way, then he would not be criminally responsible. In my opinion in such a case the man is a madman and is to be treated as such, although his madness is only temporary. . . . If you think there was a distinct disease caused by drinking, but differing from drunkenness, and that by reason thereof he did not know that the act was wrong you will find a verdict of not guilty on the ground of insanity.

Secondly, that in cases where a specific intention formed an essential element of the crime, evidence of drunkenness which rendered the accused incapable of forming that intention should be taken into consideration, in order to determine whether he had the intention or not; and

Thirdly, that evidence of drunkenness, falling short of a proved incapacity in the accused to form an intention necessary to constitute the crime, and merely establishing that his mind was affected by drink so that he more readily gave way to some violent passion, did not rebut the presumption that a man intended the natural consequences of his acts.

He then came to Meade's case and, after referring to the facts of that case and to the judgement, pointed out that the crime charged in that case was that death arose from violence done with intent to do grievous bodily harm, so that it was necessary to prove the particular intention. In the case under consideration, on the other hand, the death arose from a violent act done in furtherance of what was in itself a crime of violence. Drunkenness could be no defence unless it could be established that Beard at the time of committing the rape was so drunk that he was incapable of forming the intent to commit it, which was not the fact and, manifestly, having regard to the evidence, could not be contended. He then dealt with the way in which Mr. Justice Bailhache had left the case to the jury and remarked that the judge's direction was one applicable only to a plea of insanity which had of course never been raised. The summing up was, in fact, unduly favourable to the prisoner, and he was not prepared to say that the jury was disabled from reaching a true conclusion upon the matters which required decision. He doubted whether there was any sufficient evidence that the prisoner was in the only relevant sense drunk at all. There was certainly no evidence that he was too drunk to form the intention of committing rape, and it was proved that death was caused by an act of violence done in furtherance of the felony of rape. This was, by the law of England, murder, and the appeal should be allowed and the conviction of murder restored.

In this conclusion the other lords concurred.

It is right to add that although the conviction of murder has now been restored, the House of Lords intimated at the close of the argument in November that whatever their decision the death sentence would not be carried out.

A VENEREAL "PROFESSOR" SENTENCED.

IN the Glasgow High Court of Justiciary, on February 24th, before Lord Salvesen, A. S. Eastburn was charged with having contravened the Venereal Diseases Act, 1917, by treating men for venereal diseases, he not being a duly qualified medical practitioner. The indictment contained twelve counts. His Lordship upheld objections raised against six of the counts, by counsel for the defence, and a plea of not guilty was raised in the other six counts. The counts dismissed were for "offering" to treat which was held not to come within the Act.

Lord Salvesen explained to the jury that the question was whether in each of the six cases in which evidence would be tendered the men were treated for venereal diseases by the accused; that used not to be an offence in common law, but it was so now for an unqualified man to treat such diseases. The question was whether the accused treated for venereal disease each of the six persons and prescribed for them, and also if he did so for reward. The amounts paid for treatment by one witness were read from the accused's ledger produced in court. Between March 1st, 1915, and September 20th, 1919, he paid £189 in five sums. He returned for further advice to the "professor," who asked for a fee of £265 for a new special treatment. This sum, the witness declared, he had paid over to the accused in full in September last; no entry for it was found in the ledger, but a slip from a bundle of documents relating to cases treated by the accused and seized on his premises by the police contained the words "£250 paid," and a clerk in Eastburn's employment, who kept the books, told the court this entry was in the accused's handwriting. Professor Glaister, called for the Crown, stated that samples of the blood of this man had lately been examined by himself and two other experts, and the result showed that he was not free from the disease for which he had apparently been treated. Another witness stated that he had paid £88 in all to the accused, and a third—a seaman from Liverpool—declared he had paid Eastburn £66 in five sums, and was then advised by him to undergo his "compound treatment," which would cost £42. At the end of two years he still felt very ill and went into a Liverpool hospital for free treatment. The medical evidence was to the effect that no signs of a previous treatment suitable to the disease could be found, but that if properly treated at the outset the man would almost certainly have been restored to health. Professor Glaister further stated in evidence that the tablets supplied to witnesses for treatment were shown on analysis to contain neither arsenic nor mercury, but some vegetable substance which the analyst could not determine.

In the course of his summing up Lord Salvesen said that for many years the accused had been making a livelihood by the treatment of these diseases in men; he had advertised himself as a specialist, had given private consultations, and prescribed treatment to any person who paid him his fees. The jury returned a unanimous verdict of guilty on three of the counts, and by a majority on one count; by a majority in the other two counts their verdict was "not proven." Lord Salvesen, in passing sentence, said he entirely agreed with this very discriminating verdict. It was obvious that the accused had for profit contravened the Venereal Diseases Act, well knowing what its provisions were and that it was applicable to him. His Lordship felt that he would not be doing his duty to society if he did not impose a sentence which, at all events, would be a deterrent. In the circumstances he could not make the penalty less than six months' imprisonment.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

DR. HENRY HEAD, F.R.S., has been elected an honorary Fellow of Trinity College.

At a congregation held on March 6th the following medical degrees were conferred:

M.B.—L. G. Jacob. B.CH.—R. Stansfeld, E. V. Gostling.

UNIVERSITY OF LONDON.

WAR MEMORIAL.

A COMMITTEE, of which Lord Rosebery (Chancellor) is president and Sir Edward Busk (Chairman of Convocation) vice-president, has issued an appeal for contributions to a war memorial to members of the University of London Officers' Training Corps who were killed or died on service. It is proposed to erect the principal memorial in the standing camp of the contingent at Great Kimble, near Princes Risborough, Buckinghamshire, and to arrange for the dedication of personal memorials there. It is intended to erect a memorial in London also.

The Military Education Committee of the University has in preparation a *Roll of War Service, 1914–19*, of the University of London Officers' Training Corps. The Roll will be in three sections, the first containing particulars of the 657 officers who fell in the war; the second will record the honours and distinctions gained in the war, to a number exceeding 1,600; in the third section the names of officers will be arranged in alphabetical order to an estimated number of 4,200. The subscription price for orders received on or before June 30th, 1920, is £1 1s., with 1s. extra for packing and postage. Any profit on the publication will be devoted to the War Memorial Fund.

The V.C. was won by five former cadets of the contingent, and the two survivors are among the honorary secretaries of the fund. The number of distinctions gained in the war is 1,650, including V.C., 5; D.S.O. and Bars, 54; D.S.C., 8; M.C. and Bars, 588; D.F.C. and Bars, 10; A.F.C., 9; Mentions in Dispatches, 707; *Croix de Guerre* (French) 27, (Belgian) 15; Silver Medal for Military Valour (Italian), 5; Distinguished Service Medal (United States), 2. In addition, a number of former cadets served in the ranks.

Contributions should be sent to the Honorary Treasurer, 46, Russell Square, London, W.C.1.

UNIVERSITY COLLEGE.

F. J. Fitzmaurice Barrington, M.S., F.R.C.S., assistant surgeon to University College Hospital, and T. H. C. Stevenson, M.D., C.B.E., superintendent of statistics, General Register Office, joint secretary of the Royal Statistical Society, have been elected Fellows of University College, London.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE following were admitted (after examination) as Fellows: A. Allison, T. B. Gilchrist, J. C. Middleton, R. C. Robertson.

Dr. Thomas Forrest (Glasgow) has presented to the Royal Faculty a case of surgical instruments which had been the property of and were used by the late Lord Lister while he was a surgeon in the Glasgow Royal Infirmary. Dr. Freeland Fergus, president, accepted the gift with very great pleasure, and stated that it would be placed in the archives of the Faculty.

The Services.

ROYAL ARMY MEDICAL CORPS WAR MEMORIAL.

A COMMITTEE has been formed to deal with this question; this committee contained representatives of the Regular, Special Reserve, Territorial, and Civilian Medical Services, the Presidents of the Colleges of Physicians and Surgeons of England, and past and present Director-Generals of the Army. Ireland, Scotland, England, and Wales are all represented.

At a large and representative meeting the following decisions were agreed to:

1. That a permanent memorial should be erected in London, with replicas in Edinburgh and Dublin, if funds were available.
2. That the names of officers, non-commissioned officers, and men who had fallen in the war should be inscribed on the memorial.
3. That funds "ear-marked" for the benefit of families should be devoted to that purpose.
4. That it should be open to the public to subscribe such sums as they wish.
5. That subscriptions should be sent to the Honorary Secretary, R.A.M.C. War Memorial Fund, Captain A. R. Wright, D.S.O., War Office, Cornwall House, Stamford Street, S.E.1.

TREATMENT FOR DISABLED OFFICERS AND NURSES.

IN pursuance of the policy of decentralization, the Minister of Pensions has entrusted to the Commissioners of Medical Services in the various regions of the Ministry the responsibility of obtaining for disabled officers and nurses the medical or surgical treatment to which they are entitled under the Royal Warrant. A discharged officer or nurse who is claiming retired pay or pension on the ground that he or she is suffering from a disability which is either attributable to or aggravated by service, and who is in need of treatment for the disability, should also make application to the Commissioner of Medical Services at the regional office with a view to the necessary treatment being provided. Appended is a list of the addresses of the Regional Commissioners and the counties comprised in each region, but the local War Pensions Committee will supply any officer or nurse with the address of the appropriate regional office upon request.

1. *Scotland.*—All Scotland. Address: Adelphi Hotel, Cockburn Street, Edinburgh.
2. *Northern.*—Northumberland, Durham, Cumberland. Address: 14, Clayton Street West, Newcastle-on-Tyne.
3. *North-Western.*—Lancashire, Cheshire, Westmorland, Isle of Man. Address: 13, Piccadilly, Manchester.
4. *Yorkshire.*—Yorkshire. Address: 7, Boar Lane, Leeds.
5. *Wales.*—All Wales and Monmouthshire. Address: Angel Building, Cardiff.
6. *West Midlands.*—Staffordshire, Shropshire, Warwickshire, Worcestershire, Herefordshire. Address: Bethany Buildings, Loveday Street, Birmingham.
7. *East Midlands.*—Leicestershire, Lincolnshire, Nottinghamshire, Derbyshire, Northamptonshire, Rutlandshire. Address: Black's Building, Stoney Street, Nottingham.
8. *South Western.*—Gloucestershire, Wiltshire, Dorsetshire, Somersetshire, Devonshire, Cornwall. Address: Clifton Down Buildings, Bristol.
9. *Eastern.*—Norfolk, Suffolk, Cambridgeshire, Huntingdonshire, Essex, Bedfordshire, Hertfordshire, Buckinghamshire, Oxfordshire, Berkshire. Address: 80, Westbourne Terrace, W.2.
10. *London.*—Metropolitan Area. Address: Crown Agents' Annexe, Westminster House, Millbank, S.W.1.
11. *South-Eastern.*—Kent, Surrey, Sussex, Hampshire, Isle of Wight, Channel Isles. Address: 48, Grosvenor Gardens, S.W.1.
12. *Ulster.*—Ulster. Address: Grand Central Hotel, Belfast.
13. *Ireland South.*—Munster, Leinster, Connaught. Address: Dunlop House, Abbey Street, Dublin.

The Regions in the above list are printed in italics.

Officers and nurses are advised that in the event of their making their own arrangements for treatment without the prior approval of the Commissioner of Medical Services of the Ministry of Pensions, it may not be possible to refund to them any of the expenses thereby incurred. Communications with regard to the award of retired pay or pension should be addressed to the Officers' Awards Branch, Cromwell House Annexe, Millbank, S.W.1.

HONOURS.

FOREIGN DECORATIONS.

THE following decorations have been conferred by the Allied Powers for distinguished services rendered during the course of the campaign.

By the King of the Belgians.

Ordre de la Couronne.—Officier: Temporary Major Cuthbert Christy, R.A.M.C.

Ordre de Leopold II.—Chevalier: Lieut.-Colonel Sir David Prain, C.M.G., C.I.E., F.R.S., I.M.S.(ret.).

Médaille du Roi Albert.—Captain Oswald Ryle Horwood, A.A.M.C.

By the King of Italy.

Order of the Crown of Italy.—Commander: Colonel Charles Alfred Hodgetts, C.M.G., C.A.M.C. *Officer:* Major Charles Bramhall, O.B.E., R.A.M.C. *Cavalier:* Captain Percy R. Bolus, R.A.M.C.(T.F.).

By the President of the United States.

Distinguished Service Medal: Lieut.-Colonel and Brevet Colonel Sir Edward Scott Worthington, K.C.V.O., C.B., C.M.G., R.A.M.C.

By the President of the Portuguese Republic.

Military Order of Avis.—Commander: Colonel Alexander D. Sharp, C.B., C.M.G., A.M.S.(T.F.), Captain John William McNee, D.S.O., R.A.M.C.(S.R.).

By the King of Serbia.

Distinguished Service Medal.—Lieut.-Colonel and Brevet Colonel Sir Edward Scott Worthington, K.C.V.O., C.B., C.M.G., R.A.M.C.

Order of St. Sava (5th Class).—Captain Charles Gunn Skinner, R.A.M.C.(T.F.).

By the Emperor of Japan.

Order of the Rising Sun (3rd Class).—Surgeon Captain George T. Broatch, C.B.E., R.N.

By the Sultan of Egypt.

Order of the Nile (4th Class).—Surgeon Commander John Thornhill, R.N.

By the King of the Hedjaz.

Order of El Nahda (4th Class).—Temporary Captain Graham Colville Ramsay, R.A.M.C.

Surgeon Lieutenant Henry Cyril Conwy Joyce, R.N., has been mentioned in dispatches for services in Siberia, 1919.

A HANDBOOK FOR THE DEMOBILIZED.

THE Service Handbook, compiled by Captain H. C. Baird, D.S.O., should prove a valuable guide for demobilized officers and their dependants. It summarizes in a convenient form information as to the qualification for all available grants, pensions, and allowances, the method of application and the quarter in which it should be made, and includes brief notes on the several voluntary funds and organizations existing for special purposes. The Handbook can be obtained from the office of the *Ex-Service Man*, 11, Regent Street, S.W.1, price 1s.

Obituary.

SAMUEL WEST, M.A., M.D.OXON., F.R.C.P.,

Consulting Physician to St. Bartholomew's Hospital; President of the Royal Medical Benevolent Fund.

WE much regret to record the death on March 2nd, at his house in Wimpole Street, of Dr. Samuel West, consulting physician to St. Bartholomew's Hospital, the Royal Free Hospital, the New Hospital for Women, King George Hospital, and King Edward VII Sanatorium.

Samuel Hatch West was born at Carlisle in 1848; his father was John West, Deputy Inspector-General of Mails to the General Post Office. He was a Queen's scholar of Westminster, and a junior student of Christchurch. At Oxford he gained first-class honours in the natural science school, was demonstrator of anatomy for a short while, and later Radcliffe Travelling Fellow. From Oxford he went to St. Bartholomew's, graduating M.B. of his University in 1875, and proceeding M.D. in 1882. He obtained the membership in 1877, and was elected a Fellow of the Royal College of Physicians of London in 1885. His tenure of the Radcliffe Fellowship enabled him to continue his studies at Berlin and Vienna.

Dr. Samuel West was appointed assistant physician to St. Bartholomew's Hospital in 1887, and full physician in 1903, retiring in 1913; for some years he was lecturer on the principles and practice of medicine in the medical school. During the earlier part of this period of service

on the active staff at St. Bartholomew's Dr. West was physician also to the Royal Free Hospital and to the City of London Hospital for Diseases of the Chest. He was for long an examiner in medicine to the English Conjoint Board, and to the Universities of Oxford, Cambridge, London, and Birmingham. At the Royal College of Physicians of London he was Bradshaw lecturer in 1887, councillor from 1904 to 1906, censor in 1911–12, and senior censor in 1917. In the Royal Society of Medicine he had held office as president of the Medical Section and of the Clinical Section. He was a former president of the Medical Society of London, and delivered the Lettsomian lectures in 1900 on the subject of granular kidney. Dr. West's long and great services to the Royal Medical Benevolent Fund as honorary secretary, treasurer, and president are recorded below by Dr. Newton Pitt. This charitable work occupied a very great share of his time and thought. During the war he represented the Council of the Fund upon the Professional Classes War Relief Council, bringing to this duty his experience, energy, and goodwill.

Of Dr. Samuel West's writings his book on *Diseases of the Organs of Respiration*, in two volumes, is, perhaps, the best known. It was first published in 1902, and a second and revised edition appeared seven years later. Both editions were characterized by careful observation and analysis of contemporary work happily blended with the personal impress of the author's ripe experience. In 1900 he revised and amplified his Lettsomian lectures and published them in a book with the title *Granular Kidney and Physiological Albuminuria*—a well-planned treatise of much practical value, clear and concise in its theoretical parts, and full of useful suggestions on the practical management of cases. Many years before he had produced a small handbook, *How to Examine the Chest*, which several generations of students found helpful in forming methodical habits of bedside investigation; it was, we believe, reprinted several times. Dr. West was the author of the article on "Treatment of Acute and Chronic Nephritis" in *Wright's Index of Treatment*. His many contributions to current medical literature included a paper on "Sulph-Haemoglobinaemia," printed in the *Medico-Chirurgical Transactions;* two papers on "Nitrogen Excretion," printed in the *Proceedings of the Royal Society;* several addresses—including one in 1906, on "Dilatation and Hypertrophy of the Heart,"—printed in this JOURNAL; and a series of "clinical jottings" which appeared from time to time in *St. Bartholomew's Hospital Journal*. His literary style was clear and easy, without affectation.

Dr. West was fond of outdoor sport and country pursuits, and, above all, of music. He had an agreeable well-trained tenor voice, and in former days no students' smoking concert was allowed to close without a song by him. He married a daughter of Sir Edward Frankland, K.C.B., F.R.S., and had three sons and three daughters. The first part of the funeral service was held on March 5th at St. Martin's in the Fields. He was a member of the Governing Body of Westminster School, and the Dean of Westminster conducted the service, which was attended by the President and other representatives of the Royal College of Physicians and by many colleagues representing the hospitals and other institutions with which he was connected. With great appropriateness the musical part of the service was very beautiful.

We are indebted to Dr. JAMES CALVERT for the following appreciation:

My earliest recollections of Dr. West date from the time when I was a student and he medical tutor. His classes were very well attended; every earnest student learnt a great deal from them, and he may be considered to be the pioneer of the present medical tutorial system at St. Bartholomew's. When I was house-physician to Sir Dyce Duckworth Dr. West was the corresponding assistant physician; and when, in the course of time, I became assistant physician, he was my chief. So that for many years we worked together, I am glad to say, in perfect harmony, for he was easy and pleasant and most kindly to work with. I shall always hold in grateful remembrance his unvarying consideration and helpfulness. He was a very accomplished physician and a very practical one, with a leaning, naturally enough, to chest diseases, but certainly not limiting his activities to them, as his record shows. He was devoted to his wards, and he never allowed, as some are inclined to do, the scientific aspect of the case to interfere with the personal interests of the patient. An excellent teacher, and with great experience in teaching, he was popular with the students; his clinical clerks were many, and he always had a substantial following round the wards. Outside the hospital he had a large consulting practice of the best kind, and I am sure there are many, especially among his old pupils, who in his death feel, as I feel, a sense of personal loss.

Dr. G. NEWTON PITT writes as follows:

Dr. Samuel West was intimately associated with the Royal Medical Benevolent Fund for thirty years, and under his skilful direction the funds of the society have steadily increased in amount, so that the annual income now exceeds that in 1900 by £3,000. From 1899 he held the office of Treasurer in succession to the late Sir William Broadbent, and was mainly responsible for the reorganization of the finances. From the first he insisted that all legacies should be invested and the income expended on the annuitants, while the current income from annual subscriptions and donations should be awarded as grants to necessitous cases. The amounts last year were £3,200 and £2,800 respectively. For the past three years he has been President and acting Treasurer of the Fund.

The profession also owes a deep debt of gratitude to Dr. West, for it was mainly through his initiative that the War Emergency Fund was started, and this has already made grants to the amount of £10,000 to assist doctors on their return from the war to re-establish themselves in practice. One of his last acts was to obtain a grant of £10,000 from the National Relief Fund for the same purpose, which will enable even more liberal grants to be made in the future.

COLONEL DENIS FRANCIS KEEGAN, I.M.S. (retired), who died recently, took the diploma of M.R.C.S. in 1861, and graduated M.B. of Trinity College, Dublin, in 1862, and M.D. three years later. He obtained the F.R.C.S.Eng. in 1891. Lieut.-Colonel Henry Smith, I.M.S., writes: The death of Colonel Keegan removes one of the grandest figures in the history of the Indian Medical Service. If you named the three biggest surgeons which the Indian Medical Service has produced, you must include the name of Keegan. The grand work he did will live for generations yet unborn, and he will be more honoured in his urn than he was when alive. This is the fate of all great pioneers. Death removes them from the field of jealousy. When he was doing the spadework he had to fight the world, and he did it and established his case. We all—or some of the older members of the profession rather—still remember how he and Freyer fought the controversy on litholapaxy. We are all familiar with the grand work Keegan did in rhinoplasty, and how he established the Indian operation as *the* operation for all time. He was a powerful, clear, and incisive though courteous controversialist. Keegan was a man with a fine imagination, a powerful and versatile intellect and a strong character. It is only a very able man in any public service who can go his own way and live as an official. Keegan did this. As a man he was one of the most kind-hearted, the most generous, and the most genial of men. As a friend he was one of the few capable of that genuine friendship, as distinguished from fair-weather friendship, who would life itself resign at the sacred call of friendship. He had too much pride for servility and too little prudence for selfishness. He was the finest type of Irishman. He did most of his service in Central India, where his fine personality was a political influence of the first magnitude. He died at the age of 80 years. The Government of India did not do themselves the honour of honouring him with a decoration. A man like Keegan does not require a decoration as his passport. He made no pretension to be what, in popular language, is called an "aristocrat." He belonged to a much higher order. He was an aristocrat of the moral code of the New Testament. He leaves a grand heritage to his son and his two daughters.

THE medical profession and the public of Middlesbrough-on-Tees have to regret the loss of Dr. W. J. WILLIAMS, who was a prominent practitioner in the town for over fifty years. William Jones Williams was born in Tremadoc,

North Wales, in 1841, the son of a Baptist minister. He was educated in Liverpool, Glasgow, and Edinburgh, and graduated M.D. at the latter university in 1866. He then sought experience in the wards of some of the London hospitals, and afterwards spent many months in Paris. He spoke French with ease and facility, and was familiar with German and German medical literature. He was appointed house-surgeon to the North Riding Infirmary, Middlesbrough, in 1867, and two years later commenced practice in the town. He was elected to the medical and surgical staff on the first vacancy, and for forty years filled this position with conspicuous ability. He then became vice-president and honorary consulting surgeon. Dr. Williams was an ardent Freemason, was the Past Provincial Senior Grand Warden of the North and East Ridings, and was also Past Master of the Ferrum Lodge, Middlesbrough. He was twice married, and leaves a widow, the daughter of the late Dr. Longbotham of Middlesbrough. He was a justice of the peace for the borough and a patron of most of the institutions of the town. Such (writes a colleague) is a brief summary of one who went about his work with a conscientious diligence and devotion which won for him the admiration of the whole of his professional brethren and the affection and respect of a whole community. He was a man of high character, of most amiable disposition, and leaves a great number of friends to regret his loss.

THE death has occurred of Dr. JAMES EMERSON REYNOLDS, F.R.S., the eminent chemist, who was a member also of the medical profession. He was the son of Dr. James Reynolds of Booterstown, co. Dublin, and received his medical education at the Royal College of Surgeons and the Ledwich Medical School, Dublin, obtaining the L.R.C.P. and L.R.C.S.Edin. diplomas in 1865, and the L.R.C.P.I. in 1873. Soon after qualifying he returned to pure science, was appointed Keeper of Minerals at the National Museum, Dublin, in 1867, professor of analytical chemistry to the Royal Dublin Society in 1870, and professor of chemistry in the Royal College of Surgeons in Ireland three years later. From 1875 to 1903 he was professor of chemistry and chemical philosophy in the University of Dublin. That university conferred upon him its honorary M.D. and D.Sc. degrees, and in 1880 he was elected Fellow of the Royal Society, becoming Vice-President in 1902; in the latter year he was elected president of the Chemical Society, having previously served as president of the Society of Chemical Industry, and president of the chemical section of the British Association. Dr. Emerson Reynolds's researches were recorded in a series of papers in the *Journal of the Chemical Society* and the *Proceedings of the Royal Society*, and other scientific publications. He published a volume of lectures on experimental chemistry in 1874, and his book on general experimental chemistry appeared in 1880. In former years he was examiner in chemistry to the Universities of Cambridge and London. Thus, save for his early medical studies in Dublin and his collaboration in a manual of public health for Ireland, Dr. Emerson Reynolds had little direct contact with the practice of medicine, devoting his working life almost wholly to chemical research and to the teaching of chemistry. After his retirement from the chair of chemistry at Trinity College, Dublin, he went to live in Kensington, where he died suddenly last week in his 77th year.

DR. ROBERT MORRIS WILLIAMS of Menai Bridge died on March 2nd, aged 52. He received his medical education at the University and the Royal College of Surgeons of Edinburgh and graduated M.B., C.M.Edin. in 1892, after which he acted as colliery surgeon at Ystrad Rhondda, where he won the esteem of all with whom he came in contact, and on his departure for Menai Bridge was presented with an illuminated address and a purse of gold. He was Commissioner of the Priory of St. John for the county of Anglesey, certifying factory surgeon, M.O.H. Menai Bridge Urban District Council, and medical officer to the Post Office and Education Department. He was chairman of the North Carnarvon and Anglesey Division of the British Medical Association and had served as Deputy Representative of the Division in the Representative Body. Only three days before his death Dr. Williams presided over a successful dinner given by the medical men of North Carnarvon and Anglesey in honour of their colleagues who served in the R.A.M.C. On the following day alarming symptoms showed themselves, and Dr. J. E. Thomas of Bangor, who had so lately proposed Dr. Williams's health, was called in. An operation was performed, but death occurred from toxaemia.

Medical News.

THE London County Council proposes to exercise its powers under Section 18 of the Education Act, 1918, to provide medical treatment for fee-paying pupils attending its own secondary schools, and medical inspection and treatment for fee-paying pupils attending aided secondary schools if so requested by the governing body, provided that the medical treatment shall only be given at the Council's centres to pupils whose parents cannot afford to make private arrangements.

AT a meeting of the Marylebone Division of the British Medical Association to be held at the Hospital for Epilepsy, Maida Vale, on Tuesday, March 16th, at 4.30 p.m., Dr. Charles Porter, M.O.H. Marylebone, will read a paper on "The practitioner, public health, and preventive medicine." The meeting is open to all medical practitioners.

IT is proposed to hold a reunion dinner of officers who were attached to No. 5 General Hospital, B.E.F., in London on Saturday, April 10th. Those who wish to attend are asked to write to Dr. G. T. Loughborough, 3, Lexham Gardens, Kensington, W.8.

AT the next meeting of the Chelsea Clinical Society to be held on Tuesday, March 16th, at 8.30 p.m., in St. George's Hospital Medical School, Dr. D. M. Barcroft will open a discussion on "Is asthma a disease of the chest?" in which Sir Thomas Horder, Dr. Leonard Williams, and Dr. Hernaman-Johnson will take part.

MR. C. A. MITCHELL recently read to the Society of Public Analysts a paper on the persistence of finger prints on documents, and showed specimens fifty-six years old. He discussed the various methods of detecting finger prints on documents, and also the persistence of stains on paper, including blood finger prints.

THE annual general meeting of the Medical Sickness Annuity and Life Assurance Society will be held in the rooms of the Medical Society of London, 11, Chandos Street, W.1, on Friday, March 26th, at 3 p.m.

THE annual general meeting of the London and Counties Medical Protection Society will be held at the offices, 32, Craven Street, Strand, W.C.2, on March 17th, at 4 p.m.

A FRANCO-JUGO-SLAV medical union has been formed in Paris with the threefold object of facilitating the medical studies of Jugo-Slavs in France, the diffusion of French science among the Jugo-Slav populations, and the establishment of direct professional relations between French and Jugo-Slav medical men.

AT a meeting of the Medical Officers of Schools' Association, to be held at the house of the Medical Society of London on Friday, March 26th, at 8 p.m., Dr. G. H. Lock will read a paper on the care of minor ailments in school children. Medical practitioners interested in the subject are invited to attend.

A MEETING of the North-Western Tuberculosis Society (formerly the Lancashire and Westmorland Tuberculosis Society) will be held on Thursday, March 18th, at the Houldsworth Hall, Deansgate, Manchester, at 2.30 p.m. Dr. T. H. Peyton will read a paper on the tuberculosis colony; the attendance of medical practitioners is invited. Information as to the society, the annual subscription to which is 5s., can be obtained from Dr. G. Jessel, County Tuberculosis Dispensary, Leigh, Lancashire.

THE annual general meeting of governors of the Royal Dental Hospital of London will be held at the hospital, Leicester Square, W.C., on Thursday, March 25th, at 5 p.m., when Sir Fisher Wentworth Dilke, Bt., will preside.

THE French Medical History Society, which was established in 1902, recently revised its constitution and renewed its activities. It admits members of either sex and any nationality, and is inviting British members to join; at present they are few in number. The society recently elected the late Mr. C. Louis Taylor, Assistant Editor of this JOURNAL, but the intimation arrived after his death.

AT the matriculation examination of the University of London in January there were 102 successful candidates in the first division and 807 in the second.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London*; telephone, 2631, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocre, Westrand, London*; telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick-Street, Dublin, and of the Scottish Office, 6, Rutland Square, Edinburgh.

QUERIES AND ANSWERS.

"P." relates a case of poliomyelitis affecting the quadriceps and peronei which for the first two years was treated by muscular rest and relaxation by means of a Thomas splint. During the succeeding two years it has been treated with massage and some electricity. He asks for suggestions as to any other treatment.

"H. H. P.," who has under treatment a factory girl suffering from hysterical paraplegia, asks whether there is a hospital or other place where treatment by psychotherapy could be got.

INCOME TAX.

"A. A. A." inquires as to the expenses he can deduct for income tax purposes from the salary received by him as an assistant school medical officer under a county council.

*** 1. "Running expenses of car when on duty where not covered by allowance from the council." If the allowance is at an annual rate or calculated in any other way other than for specific journeys we imagine that the revenue authorities would require very full proof before making a deduction that would in effect impugn the council allowance as insufficient; nevertheless our correspondent is entitled in law to any excess over the allowance of expenses incurred solely, exclusively, and necessarily in the performance of the duties of his office.

2. "Cost of purchase of car less price obtained for car sold on leaving practice to join the services during the war." Assuming that the council's allowance is intended to cover wear and tear, "A. A. A." will have to meet the difficulty mentioned above. Possibly he may be able to induce the local inspector of taxes to defer the question until he can show the results of twelve months' running of the car.

3 and 4. "Subscriptions to societies and cost of new books and subscriptions to medical library." It is necessary for "A. A. A." to expend something from year to year to maintain that degree of professional competence essential to the proper performance of his duties. So much of the subscriptions and cost of new books as can fairly be brought within that description he is, we conceive, entitled to deduct as expenses.

LETTERS, NOTES, ETC.

SUBCUTANEOUS INJECTIONS OF OIL OF CAMPHOR.

IN the EPITOME for January 31st (paragraph 111) the experience of Jensen in the treatment of sciatica by the subcutaneous injection of oil of camphor was noted. It was said that he injected 3 to 4 cm., which was raised in severe cases to 5 or 6 cm. daily. A correspondent asks as to the formula for this camphor oil. The preparation, though little used in this country, is largely employed in France and Germany in the treatment of heart failure, typhoid fever, and low forms of pneumonia. The usual prescription is 2 parts of camphor oil in 10 of sterile olive oil, and the dose is 10 minims, increased if necessary. Heroic doses up to 30 grains of camphor have been given but are dangerous. The firm of William Martindale supplies the oil for hypodermic use in sterules containing 1½ and 3 grains in sterile olive oil.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 39, 42, 43, 44, 45, 46, 47 and 48 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 40, 41, and 42.

SITES OF INOCULATION LESIONS IN SYPHILIS.

IN our issue of January 10th, p. 51, we gave some account of a report to the Medical Research Committee by Surgeon Lieutenant Commanders R. J. G. Parnell and P. Fildes, which dealt with the treatment of syphilis in the navy. Dr. Douglas White, honorary secretary of the National Council for Combating Venereal Disease, has obtained from Surgeon Lieutenant Commander Parnell statistics with regard to the site of inoculation in 2,743 consecutive cases at R.N. Hospital, Haslar. They are as follows:

Genital Inoculation Lesions:

In urethra (concealed)	1	
Within meatus (concealed)	25	
At meatus (visible)	94	
On glans penis	270	
On corona glandis	86	
In sulcus	420	
On prepuce (skin 328, m.m. 346)	674	
On fraenum preputii	192	
Under phimosed prepuce (concealed)	121	
		1,881 = 68.2%
Body of penis	209	
Root of penis	50	
Scrotum	20	
Peni-scrotal angle	13	
		292 = 10.6%
Site on penis not stated	238	
Combinations of above	283	
		521 = 19%

Extra-genital Inoculation Lesions:

Lip	20
Eye (palpebral conjunctiva)	3
Anus (at or near)	7
Thigh	2
Pubes	6
Chin	1
Finger	2
Umbilicus	1
Nose	1
Neck	1
Abdomen	1
Buttock	1
	46 = 1.7%

Remarks.

1. In addition 101 cases had manifest signs of syphilis or had cerebro-spinal syphilis, yet no site of the inoculation lesion was found; all the men denied a sore on the penis. A few of these men gave a history of "gonorrhoea." The majority denied having had venereal disease in any form, but admitted risks of infection. A very small number denied venereal disease, and stated that they had never exposed themselves to infection. Three of these had definite signs of congenital syphilis.

2. One case of both genital and extra-genital inoculation lesions occurred (lip and penis).

3. Of the 238 cases in which the site (on penis) was not stated, the vast majority were old infections giving a definite history of a sore on the penis, but no scar was found. In a few cases there was an indefinite amount of scarring at a site other than that at which the sore apparently had been.

THE following appointments of certifying factory surgeons are vacant: Currie (Edinburgh), Farnworth (Lancaster), Lynton (Devon).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

THE charges for advertisements in the BRITISH MEDICAL JOURNAL will be increased at the end of March. The new charges will apply to all advertisements for insertion in the JOURNAL of April 3rd and subsequently. The rates will be as follows:

Six lines and under	7s. 6d.
Each additional line	1s. 3d.
Whole single column	£6 0s. 0d.
Whole page	£16 0s. 0d.

An average line contains six words.

From the issue of April 3rd the charge for announcements of births, marriages, and deaths will at the same time be increased to 7s. 6d.

Present Scale.

	£ s. d.
Seven lines and under	0 6 0
Each additional line	0 0 9
Whole single column	4 0 0
Whole page	12 0 0

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.